All issues available have
been filmed.
Unfortunately, any
scattered missing issues
are no longer available.

CT 19/82/01

NCI/ICRDB/CT19 82/01

PB82-939401

ICRDB CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/01

JANUARY, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
JOHN R. STROEHLEIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY

MAR 2 1982

U. S. GOVT. PUBS.
DEPOSITORY 376

A LIMITED NUMBER OF THE
COMPILATION OF EXPERIMENTAL
CANCER THERAPY PROTOCOL
SUMMARIES, 1981, ARE AVAILABLE.
FOR A COMPLIMENTARY COPY,
CONTACT ICRDB PROGRAM,
WESTWOOD BLDG., RM. 10A18,
BETHESDA, MD. 20205

In this issue:

- SCREENING AND DIAGNOSIS........................ 1-17
- PATHOLOGY, STAGING, AND PROGNOSIS........................ 18-39
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS........................ 40-56
- SURGICAL AND RADIATION THERAPY..... 57-73
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY........................ 74-82
- SELECTED CLINICAL CORRELATIONS...... 83-94
- REHABILITATION ASPECTS........................ 95-100
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER........................ 101-126
- SELECTED PRE-CLINICAL STUDIES........ 127-143

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20. 3173/2:

SCREENING AND DIAGNOSIS

1. BRUSHING CYTODIAGNOSIS OF THE BILIARY TRACT; COMPARISON OF CANCER OF THE BILE DUCT AND CANCER OF THE PANCREAS (MEETING ABSTRACT).

Sato O, Okamura H, Matsumoto F, Kondo T, Koide M, Ogiya I, Ozawa K, Sugitani M, Nakagawa H, Matsumoto T, Miyagawa T, Maekawa T, Watabe H, Sawada Y, Wagai K, Kidokoro T

First Dept. Surgery, Juntendo Univ., Sch. Medicine, Bunkyo-ku, Tokyo 113, Japan

Proceedings of the 9th Annual Meeting of Japanese Association of Biliary Tract Surgery held in Tokyo, 10 April, 1981. Japanese Association of Biliary Tract Surgery, Tokyo 162, Japan, 104 pp., 1981.

Brushing of the biliary tract was performed on 28 patients with obstructive jaundice between 1978 and 1980. Cancer was diagnosed in 27 patients but not in 1 with recurrent gastric cancer. The cancers were 5 portal cancers, 10 cancers of the bile duct, 7 cancers of the head of the pancreas, 5 recurrent gastric cancers and 1 recurrent cancer of the pancreas. From each of seven resected cancers of the lower portion of the common bile tract and four resected cancers of the head of the pancreas, which had similar pictures of percutaneous hepatic cholangiography, 100 cancer cells were examined under a light microscope after Papanicolaou staining. Compared to the abrasion cytodiagnosis used until now, there were relatively more cancer cells in cancer of the bile duct and cancer of the pancreas, particularly in the latter. The av cell diameter for cancer of the bile duct was 23.6 u, and that for cancer of the pancreas was 18.0 u. The av diameter of the nucleus was 12.6 u for cancer of the bile duct and 11.2 u for cancer of the pancreas. The nucleus/cytoplasm ratio was large in both kinds of cancer. Many of the cells were interdigitated and aciniform in arrangement. Many cancer cells could be collected from cancer of the bile duct but few background findings were obtained. However, in cancer of the pancreas, many epithelial cells of the bile duct which were atypical with various changes within the benign range were obtained as background findings, as well as the cancer cells. All the cancers of the pancrease showed these accompanying findings to a marked extent. (no Refs) (In JPN)

2. ULTRASONICALLY GUIDED FINE-NEEDLE BIOPSIES IN NEOPLASTIC LIVER DISEASE: CYTOHISTOLOGIC DIAGNOSES AND ECHO PATTERN OF LESIONS.

Schwerk WB, Schmitz-Moorman P

Medizinische Universitatsklinik, D-3550 Marburg/Lahn, W. Germany

Cancer; 48(6):1469-1477 1981

Sixty consecutive percutaneous fine-needle aspiration biopsies guided by ultrasound were performed without complication in patients with ultrasonically suspected focal or diffuse neoplastic liver disease. Evaluations of aspirated samples were based on cytologic examination of smear preparations (100%) combined with histologic examination of serial sectioned tissue fragments (81.7%). The overall accuracy rate of cytohistologic evaluations was 91.6% with a sensitivity of 92.2%, a specificity of 88.9%, and a high predictive value of positive results (cytology, 97.8%; histology, 100%). Percutaneous fine-needle aspiration biopsy guided by sonography proved to be a safe, useful, and highly accurate technique for making cytohistologic diagnoses of hepatic masses suspected of being malignant. No relationship was found between the various echo patterns of intrahepatic neoplastic lesions and cell type or primary site of tumor origin. (Author abstract) (30 Refs)

3. ENDOSCOPIC DIAGNOSIS OF EARLY OESOPHAGEAL CARCINOMA.

Wang GQ

Cancer Inst., Chinese Acad. Medical Sciences, Beijing, People's Republic of China

J R Soc Med; 74(7):502-503 1981

Of 132 patients (76 men, 56 women; 28-70 yr old) with histologically proved early esophageal carcinomas, 117 showed early carcinomatous changes upon routine endoscopy including localized mucosal erosion (62), circumscribed mucosal protuberances (30), localized mucosal roughening or hyperemia (15), and mucosal plaques (10). In the 73 patients in whom the in vivo staining test with 10 ml of 1% toluidine blue was carried out following esophagoscopy, the staining appearance of the early esophageal carcinomas varied. The advantages of intraluminal toluidine blue staining are discussed. (6 Refs)

4. PRESENT STATUS OF ENDOSCOPIC SPHINCTEROTOMY (EST) OF THE PAPILLA OF VATER.

Nakajima M, Fujimoto S, Yamaguchi K, Kimoto K, Kawai K

Dept. Preventive Medicine, Kyoto Prefectural Univ. Medicine, Kyoto, Japan

I To Cho; 16(6):649-659 1981

The successful use of endoscopic sphincterotomy (EST) in 305/313 patients is described. Biliary tract stones were removed by spontaneous passage (83 patients), basket retrieval (157), or combined use of both processes (41) in 281/289 patients following EST. The stones removed ranged in size from 5-45 mm. Peroral cholangioscopic inspection of the duct and biopsy from the lesion were successful in five patients with biliary tract tumors following EST. Complications of EST are described, with morbidity rate = 3.5% and mortality = 0.3%. Therapeutic indications for EST include various types of biliary tract stones and stenosis of the papilla not extending above the intramural portion of the distal bile duct. Diagnostic indication for EST is any ductal abnormality of the biliary tract which is suggestive of tumor or inflammation. The technique of EST is described. (40 Refs) (In JPN)

5. OCCURRENCE OF GASTRIC MUCOSAL EROSIONS AND THEIR ASSOCIATION WITH OTHER UPPER GASTROINTESTINAL DISEASE: A STUDY OF PATIENTS EXAMINED BY ELECTIVE GASTROSCOPY.

Karvonen AL

Dept. Internal Medicine, Central Hosp., SF-65130 Vaasa 13, Finland

Ann Clin Res; 13(3):159-163 1981

The occurrence of erosive lesions in the stomach in 2,080 men and 1,757 women who had undergone elective esophagogastroduodenoscopy was investigated and their association with other upper gastrointestinal diseases detected by gastroscopy and the seasonal variation of these occurrences were explored. Gastric mucosal erosive lesions were detected in 404 patients (10.5%); most were in patients between 30 and 60 yr old. Erosions were associated with active or past peptic ulcer disease in 30% and with erosive esophagitis in 6%. Gastric polyps were found in 4% and gastric carcinoma in two cases. A significant seasonal variation was observed. (20 Refs)

6. ULTRASONIC DIAGNOSIS OF CARCINOMA OF THE GALLBLADDER (MEETING ABSTRACT).

Yokomizo S, Yano M, Tsuru A, Okabe M, Hirai S, Sata M, Saitsu H, Tanaka T, Ureshino J, Muraishi N, Ogata M, Tomoda N, Koga A, Kobayashi S, Nakayama T, Koga M

Second Dept. Surgery, Kurume Univ., Sch. Medicine, Kurume-shi, Fukuoka Pref. 830, Japan

Proceedings of the 9th Annual Meeting of Japanese Association of Biliary Tract Surgery held in Tokyo, 10 April, 1981. Japanese Association of Biliary Tract Surgery, Tokyo 162, Japan, 104 pp., 1981.

Twenty-seven patients who had preoperative ultrasonography, and had been confirmed to have carcinoma of the gallbladder by surgery, between 1978 and 1980 were examined. The ultrasonograms were divided into three types. Type I showed a tumor protruding into the gallbladder cavity, Type II showed a tumor mass in the whole gallbladder, and Type III showed a thick gallbladder wall. Invasion and metastasis of the liver were detected by preoperative ultrasonography in 8 of 13 patients who had metastasis to the liver, the bile duct, or the lymph nodes which had been discovered during surgery. Invasion into the bile ducts appeared as a distention of the bile duct above the common hepatic duct in all five patients who had obstructive jaundice and had ultrasonography before percutaneous transcholedocal drainage. Metastasis to the lymph nodes was detected in only 3 of 16 patients who had metastasis to the liver, the bile duct, or the lymph nodes which had been determined during surgery. The diagnostic rate for Types I, II and III was 92.3%, 85.7% and 57.1%, respectively, and 81.5% for all the patients. The Type I cancers were six of papillary type, one of nodular type, one of infiltrative papillary type, and two of infiltrative nodular type, with no infiltrative type cancers. The Type II cancers were all infiltrative papillary type, and infiltrative filled the gallbladder. All the Type III cancers were infiltrative type. Histologically, six, three, and one of the Type I cancers were papillary adenocarcinoma, tubular adenocarcinoma and squamous cell carcinoma, two and one of the Type II cancers were papillary adenocarcinoma and tubular adenocarcinoma, and one, two, one and one of the Type III cancers were papillotubular adenocarcinoma, tubular adenocarcinoma, poorly differentiated adenocarcinoma and one adenosquamous carcinoma, respectively. (no Refs) (In JPN)

7. SONOGRAPHIC DIAGNOSIS OF PRIMARY CARCINOMA OF THE GALLBLADDER. SUMMARY OF ONE YEAR'S EXAMINATIONS.

Bondestam S

Dept. Diagnostic Radiology, Meilahti Hosp., Helsinki Univ. Central Hosp., SF-00290 Helsinki 29, Finland

Diagn Imaging; 50(4):197-200 1981

The material of 1 yr sonographic examinations of the gallbladder region have been analyzed for diagnosis of gallbladder carcinoma in a prospective study from a large hospital. Of 11 cases diagnosed sonographically 6 were proved correct by surgery or autopsy; 5 were false-positive results. In addition, there was one false-negative diagnosis. In three sonographically diagnosed cases fine-needle aspiration biopsy of suspected liver in infiltration gave two positive and one false-positive result. Sonography can suggest the diagnosis of gallbladder carcinoma, but inflammatory changes in the gallbladder may simulate or mask the signs of malignancy. (Author abstract) (6 Refs)

8. BILIARY SLUDGE - ULTRASONIC APPEARANCE SIMULATING NEOPLASM.

Anastasi B, Sutherland GR

Dept. Radiology, Stobhill General Hosp., Glasgow, Scotland

Br J Radiol; 54(644):679-681 1981

Four cases of biliary sludge with an unusual appearance are reported. Ultrasonic examination indicated a solid tumor arising from the gallbladder wall. Surgery or autopsy findings showed that the mass effect was due to bile stasis in the gallbladder. When such lesions are discovered the ultrasonic examination must be repeated to allow a correct diagnosis. (7 Refs)

9. COMPUTED TOMOGRAPHIC ANGIOGRAPHY (CT ANGIO) OF HEPATIC TUMOR: EXPERIMENTAL AND CLINICAL STUDIES.

Yokogawa S

Dept. Radiology,, Sch. Medicine, Kobe Univ., Kobe, Japan

Nippon Igaku Hoshasen Gakkai Zasshi; 41(4):300-319 1981

CT Angio means the method that visualizes the vascular bed of the liver by CT after transvenous injection of a bolus of contrast material. To establish the plan of CT Angio scan, the hepatic circulation time was studied by using 99mTcpertechnetate. Based on the result, 100 or 50 ml of 60% Urografin was injected iv at a rate of 5 ml/sec and the CT scan was started 20 sec after the beginning of the injection. Possible artifact and alteration of the CT value due to flow of contrast media during CT scan were studied on the phantom. Consequently, artifacts were not seen and the CT value was proportionate to the flow vol of the contrast medium. The diagnostic ability of CT Angio was clinically evaluated on 33 hepatic tumors (15 hepatomas, 3 cholangiomas, 13 liver metastases, 1 cyst and 1 hemangioma) with EMI 5005 or GE CT/T 8800. The CT value of the periphery of tumor was increased in all cases of hypervascular tumor (15 hepatomas, 7 metastases and 1 hemangioma) and the CT value of hypovascular tumor (3 cholangiomas, 6 metastases and 1 cyst) was nearly equal to that in plain CT and contrast enhancement CT (CE-CT). Therefore, the tumor vascularity was easily diagnosed by CT Angio. The detectability index (DI) which means a difference between CT value of a tumor and that of a normal liver was increased in 19 of 23 hypervascular tumors by CT Angio, so that the margin of tumors was high dense. In 10 cases of hypovascular involvement, tumors were more easily detected by CT Angio than plain CT. The contrast accumulation patterns on CT Angio were analyzed to ascertain the possible correlation between CT Angio and histology. The accumulation patterns were classified into five types (homogeneous, mottled, patchy, ring-like and negative types). In the homogeneous type, a tumor was homogeneously opacified. In the mottled type, a tumor was inhomogeneously opacified to be recognized as a linear or dotted accumulation. In the patchy type, a focus was partially or almost totally opacified. The ring-like type that was observed as a circular accumulation was divided into a thick wall and thin wall subtype. In the above four types, the lesions appeared to be hypervascular on conventional angiograms, and hepatomas were frequent in the patchy type (7 cases/15) and metastases in the thin wall ring-like type (5 cases/7). No accumulation was obtained in CT Angio of hypovascular tumors (negative type), hence the differential diagnosis of them was difficult on the accumulation pattern. (Author abstract) (31 Refs) (In JPN)

READEX FICHE best copy available

10. LEIOMYOSARCOMA OF THE INFERIOR VENA CAVA: ANGIOGRAPHIC AND COMPUTED TOMOGRAPHY FINDINGS. REPORT OF TWO CASES AND REVIEW OF IMAGING CRITERIA.

Chauhan MA, Smith PL, Ferris EJ, Murphy K, Westbrook K, Slayden JE

Dept. Radiology, Univ. Arkansas for Medical Sciences, 4301 W. Markham St., Little Rock, AR, 72205

Cardiovasc Intervent Radiol; 4(3):209-214 1981

Angiographic findings are described in two patients with leiomyosarcoma of the inferior vena cava and are correlated with the computed tomography (CT) findings in one of these patients. Inferior vena cavography showed complete caval occlusion with collateral circulation in the first patient and a lobular filling defect without obstruction or collateral channels in the second patient. Aortography allowed only an indistinct delineation of the extent of tumor growth in the first patient and failed to show a vascular lesion in the second. Hepatic arteriography showed no hepatic involvement in either of the patients. A selective right renal arteriogram in the second patient failed to show abnormal vessels, but did demonstrate a mass displacing the kidney and ureter. In this patient, the tumor's size and its relationship to surrounding organs were clearly demonstrated by CT. The authors suggest that a screening venogram followed by a CT study, with and without contrast enhancement, be the initial studies in patients with leiomyosarcomas of the inferior vena cava; in patients with involvement of the upper vena cava, delineation of hepatic involvement by arteriography is also indicated. (20 Refs)

11. EXAMINATION OF ANGIOGRAPHY FOR CANCER OF THE BILE DUCT (MEETING ABSTRACT).

Kubota M, Sugita T, Tanaka Y, Sonoda H, Kondo Y, Ogoshi K, Makuuchi H, Noto T, Nakasaki H, Tajima T, Mitomi T

Second Dept. Surgery, Sch. Medicine, Tokai Univ., Isehara-shi, Kanagawa Pref. 259-11, Japan

Proceedings of the 9th Annual Meeting of Japanese Association of Biliary Tract Surgery held in Tokyo, 10 April, 1981. Japanese Association of Biliary Tract Surgery, Tokyo 162, Japan, 104 pp., 1981.

Twenty-six patients with cancer of the bile duct were seen between 1975 and 1980, and angiography was performed in 21 patients; the patients who required immediate surgery or who were seriously ill were excluded. Malignancy and the site (primary cancer of the bile duct) could be accurately diagnosed in nine patients, cancer was suspected in four, and a false diagnosis was made in eight. Many of the diagnoses for the patients with well-advanced cancer in the upper portion of the common bile duct were accurate, but few were accurate for the patients with relatively localized lower portion of the common bile duct cancer. Hepatic metastasis could be diagnosed by angiography in 16 out of 18 patients whose hepatic metastases were confirmed. Resection was possible for 13 of the 21 patients and 4 had curative resection. The resection rate was high for cancer of the lower portion of the common bile duct. Cancers of 5 of the 13 patients for whom there were positive arterial findings and of all 5 with negative findings could be resected. None of the patients with positive arterial findings had radical surgery. The portal veins were not clearly shown in 6 patients, but of the 14 with clear pictures, the tumors of 5 who had postive portal findings could not be resected while those of 9 who had negative portal findings were resected. (no Refs) (In JPN)

12. EVALUATION OF CHOLANGEOGRAPHIC PROCEDURES IN DIAGNOSIS OF OBSTRUCTIVE JAUNDICE.

Satake K, Cho K, Tatsumi S, Kobayashi K, Umeyama K, Yamamoto S
First Dept. Surgery, Osaka City Univ Medical Sch., Asahi-Machi, Abeno-ku, Osaka 545, Japan
Am Surg; 47(9):387-392 1981

Endoscopic retrograde cholangiography, percutaneous transhepatic cholangiography with external bile drainage and a combined method utilizing both procedures were evaluated in 187 patients with obstructive jaundice. Ductal obstructive regions were located in 90% of cases by endoscopic retrograde cholangiography, and 55% of these were correctly diagnosed. Complications were observed in 7.9% with a mortality rate of 2.9%. The most serious complication was cholangitic sepsis. By percutaneous transhepatic cholangiography with external bile drainage, ductal obstructive regions were correctly located in 82%, 37% of these patients were correctly diagnosed. Complications occurred in 9.2% with a mortality rate of 1.5%. The most serious complication was massive bleeding. Successful external bile drainage could be obtained in most cases. The combined method overcomes the disadvantages of the single methods and the cause of obstructive jaundice can be diagnosed more precisely. The surgeon has a better knowledge of the type and the extent of the lesion prior to definitive surgery and can operate more safely on patients with obstructive jaundice when the serum total bilirubin, has decreased to a level below 5 mg/dl. (Author abstract) (6 Refs)

13. PERCUTANEOUS TRANSHEPATIC CHOLANGIOSCOPY (PTCS).

Nimura Y, Asakawa N, Fukuda S, Misei Y, Nakazawa S
First Dept. Surgery, Nagoya Univ. Sch. Medicine, Nagoya, Japan
I To Cho; 16(6):681-689 1981

Percutaneous transhepatic cholangioscopy (PTCS), in which percutaneous drainage of the bile duct (PTCD) is performed to allow insertion of a cholangioscope into the drainage catheter or its fistula and direct examination of the inside of the bile duct, was used in the diagnosis of patients with obstructive jaundice. Three diagnostic advantages of PTCS are the abilities to differentiate between benign and malignant obstructive jaundice, to determine the extent of cancerous tumors, and to detect multiple foci prior to surgery. By means of PTCS, transhepatic cholangioscopic lithotomy was performed on a patient with bile duct or intrahepatic stones who could not withstand laparotomy. PTCS was used in 43/143 PTCD procedures with good results. Diagnostic and therapeutic advantages of PTCS are discussed. (14 Refs) (In JPN)

14. AN EVALUATION OF 99MTC PERTECHNETATE SCANNING FOR THE DETECTION OF COELIAC DISEASE AND CROHN'S DISEASE.

Holt S, Taylor TV, McLoughlin GP, Heading RC, Tothill P
Dept. Medicine, Div. Gastroenterology, Univ. Alberta, 8-104A Clinical Sciences Building, Edmonton, Alberta T6G 2G3, Canada
Eur J Nucl Med; 6(8):361-364 1981

The small intestinal accumulation of 99mTc pertechnetate was studied in 117 adult patients of whom 21 had coeliac disease (9 men, 12 women; 27-66 yr old), 13 had Crohn's disease (3 men, 10 women; 19-57 yr old), and 83 had gastroduodenal disease but no known small bowel pathology (51 men, 32 women; 20-77 yr old). Of the 83 patients with gastroduodenal disease, 5 had gastric cancer. The results indicated that scintiscanning with 99mTc pertechnetate does not provide a consistently reliable method for the detection of small bowel pathology. (10 Refs)

15. IMAGING OF IRRADIATED LIVER WITH TC-99M-SULFUR COLLOID AND TC-99M-IDA.

Gelfand MJ, Saha S, Aron BS
E. L. Saenger Radioisotope Lab., Univ. Cincinnati, Mail Location 577, Cincinnati, OH, 45267
Clin Nucl Med; 6(9):399-402 1981

In three cases, irradiated regions of liver failed to concentrate Tc-99m-sulfur colloid. In two of these three, imaging with Tc-99m-acetanilide iminodiacetic acid (IDA) agents within 5 days showed near normal hepatic uptake of this hepatobiliary imaging agent. The hepatic parenchymal cells may be imaged with Tc-99m-IDA in some irradiated regions of liver, despite loss of reticuloendothel ial cell function. (Author abstract) (12 Refs)

16. THE VALUE OF LIVER SCINTIGRAPHY IN THE MANAGEMENT OF PATIENTS WITH SUSPECTED GASTRIC CANCER. A PROSPECTIVE, CONSECUTIVE STUDY.

Christensen M, Jakobsen PM, Johansen P
Dept. Clinical Physiology, Aalborg Hosp., Aalborg, Denmark
Acta Chir Scand; 147(4):269-270 1981

Patients with gastric cancer and liver metastases are believed not to benefit from gastric resection. In 43 patients with strong suspicion of - or proven - gastric cancer, fit for elective, radical surgery, preoperative liver scintigraphy was performed, in an attempt to select patients with liver metastases before laparotomy. Liver scintigraphy identified six out of seven patients with metastases. One patient with massive steatosis had a false-positive scintigram. Percutaneous scan-guided fine-needle aspiration biopsy verified four true positive scintigrams. True-positive scintigrams in two patients heralded a change in the planned treatment. We consider that a preoperative liver scintigraphy in a population thus selected is beneficial in the planning of treatment: only patients with a negative scan-guided fine-needle aspiration biopsy should be operated upon. (Author abstract) (6 Refs)

17. DUODENAL POLYPS: DIAGNOSIS AND MANAGEMENT.

Reddy RR, Schumann BM, Priest RJ
(c/o Schuman) Div. Gastroenterology, Henry Ford Hosp., 2799 West Grand Blvd., Detroit, MI, 48202
J Clin Gastroenterol; 3(2):139-145 1981

Experience with 45 patients (26 women and 19 men; ages 30-83 yr) in whom duodenal polyps were identified at duodenoscopy over a 6-yr span is reviewed. Radiologic examination prompted endoscopy in 25 patients, in 13 of whom a diagnosis of polyp was made and in 12 of whom duodenal deformity or mass lesions were identified. Polyps in 23 patients were greater than 1 cm in size; most of the polyps not identified by x-ray were less than 1 cm in size. Biopsies were done in 38 patients: there were 8 with adenoma, 6 with villous adenoma, 2 with Brunner's gland hyperplasia, 2 with lipoma, 1 with carcinoid, and 19 with normal mucosa or chronic inflammation; the incidences and features of these entities are reviewed. Eight patients underwent surgery and four underwent endoscopic polypectomy. It is concluded that (1) small duodenal polyps are frequently missed on upper gastrointestinal x-rays, but they are submucosal polyps of little significance, (2) polyps cannot generally be differentiated into tissue categories by endoscopy, but villous adenomas show some characteristic features that permit reliable endoscopic analysis, (3) a villous adenoma warrants excision because of the high incidence of malignancy associated with it, and (4) pedunculated duodenal polyps can be removed safely with endoscopic snare excision. (26 Refs)

PATHOLOGY, STAGING, AND PROGNOSIS

18. A NEWLY DEVELOPED CLINICAL STAGING SYSTEM BASED ON RESIDUAL LIVER FUNCTION IN HEPATOCELLULAR CARCINOMA PATIENTS AND ITS RELATIONSHIP TO INTRA-ARTERIAL ONE-SHOT INJECTION OF ANTICANCER DRUGS.

Ando K, Okita K, Tsubota W, Miyazaki M, Numa Y, Matsuda S, Morimoto T, Sasaki M, Watanabe S, Fukumoto Y, Nawata J, Kodama T, Takamoto T
First Dept. Internal Medicine, Yamaguchi Univ., Sch. Medicine, Ube-shi, Yamaguchi Pref. 755, Japan
Kanzo; 22(1):52-60 1981

Although the anatomical extent of the cancer is an important factor in evaluating the prognosis of hepatocellular carcinoma (HCC), however, a clinicaL staging system for HCC should be based on functional rather than anatomical parameters. The authors have tried to device a new staging system for HCC based on the residual function of cancer-bearing liver by using albumin, bilirubin, glutamic oxaloacetic transaminase (GOT), GOT/glutamic pyruvic transaminase, indocyanine green test at 15 min and the existence of ascites. According to the total score calculated from scoring method, the clinical stages were divided into three. Cases of stage III, reflecting markely impaired residual liver function, had poor prognoses, whereas, many of the cases of stage I had good prognoses probably owing to well preserved liver function. This newly developed classification was useful in evaluating the prognoses of patients with HCC. Ia one-shot injection therapy with dose-dependent anticancer drugs (mitomycin C and/or adriamycin) was of use in all three stages, especially stage I, from the viewpoint of survival time. (16 Refs) (In JPN)

19. CLINICAL AND PATHOLOGICAL STUDIES OF CARCINOMA OF THE ESOPHAGUS INVOLVING THE TRACHEA, BRONCHUS AND LUNG.

Uchida Y, Nakamura Y, Nakao S, Minami H, Kawahara K, Ichimanda M, Hidaka S, Uchiyama Y, Ohmagari T, Ayabe H, Miura T, Shirabe J, Tsuji Y, Shibata K, Koga Y, Tomita M, Ashizawa A
First Dept. Surgery, Nagasaki Univ., Sch. Medicine, Sakamoto-cho, Nagasaki 852, Japan
Nippon Shokaki Geka Gakkai Zasshi; 14(1):10-20 1981

Of 24 patients with esophageal cancer having invasion into the neighboring structures, 16 had histologically invasion into the neighboring structures, 5 had invasion into the trachea and bronchi (A), and 5 had invasion into the lungs (B). Combined resection without presurgical irradiation was performed in two of the (A) patients who had esophagotracheal fistulas, but both of them died within 4 mo. The invaded area in the other three patients was resected by scraping. Metastasis to the lymph nodes, lungs, and bones was seen in these patients, and the longest survival period was 7 mo. Partial resection of the lung was performed in four of the (B) patients, the lesion being scraped off in the other patient. The longest survival period was 6 mo. Metastasis to the lungs and bones appeared in these patients. Lung metastasis wa s seen in four of the seven patients with invasion into the trachea, bronchus, and lungs, excluding the three patients who died from the operation, and the metastasis was to the lung on the side invaded. Metastasis to the cervical lymph nodes tended to be more frequent for tracheal and bronchial invasion than lung invasion. The cancer tissue of the invaded area disappeared after irradiation in some of the patients. For lung metastasis, combined resection can be considered only in the case of localized cancer with invasion and metastasis to no or only group 1 lymph nodes when an esophagotracheal fistula has not been formed. In other cases, as much of the invaded area as possible is resected along with the cancer, and postoperative irradiation is used on the remnant cancer tissue. Bypass surgery is predominantly used for patients with unresectable cancers and for those in whom a fistula has formed, and radical irradiation follows. Cervical esophageal cancer is an exception. (Author abstract) (33 Refs) (In JPN)

20. CLINICOPATHOLOGICAL STUDY ON THE TYPES OF ESOPHAGEAL INVASION IN CARCINOMA OF THE UPPER ONE-THIRD OF THE STOMACH.

Watanabe S
First Dept. Surgery, Juntendo Univ., Sch. Medicine, Bunkyo-ku, Tokyo 113, Japan
Nippon Geka Gakkai Zasshi; 82(3):220-229 1981

Carcinoma in the upper one-third of the stomach often invades the esophagus. Although intraoperative macroscopic determination of safe proximal margin is essential for curative operation, it is not always easy to identify the extent of invasion by gross inspection. Fifty-five surgical specimens of upper one-third gastric carcinoma were studied macroscopically and microscopically as to the types of esophageal invasion. Macroscopically, types of invasion were basically classified into three (localized, intermediate, and invasive) but with two subtypes in the localized and three subtypes in the invasive according to the surface characteristics of the neighboring esophageal epithelium, there were six types altogether. Histologically, types of invasion of the esophagus were classified into five according to the depth and pattern of invasion. The greatest discrepancy was observed between macroscopic and histological determination of the extent of invasion when the macroscopic invasive type was encountered, particularly in the subtypes with either a flat scirrhous or furrowed appearance in the neighboring esophageal epithelium. The distance of discrepancy was about 3 cm at most. Therefore, it was concluded that the free surgical margin at the proximal stump should easily be obtained if the line of excision is set at an area 3 cm proximal to the margin of macroscopic changes. (Author abstract) (30 Refs) (In JPN)

21. EARLY GASTRIC CARCINOMA: CLINICOPATHOLOGIC ANALYSIS OF 50 CASES.

Liu T, Chen M
Capital Hosp., Chinese Acad. Medical Sciences, Beijing, People's Republic of China
Chin Med J [Engl]; 94(6):345-354 1981

Clinical and pathologic aspects of early gastric carcinoma (EGC) are presented. Incidence of discovery of EGC has been greatly enhanced by the advent of fibro-optic gastroscopy. Tissue from 50 resected stomachs (43 males and 7 females, aged 34-80 yr) was prepared for microscopic and histologic examination. The majority of EGC were found in the lesser curvature (16 cases) and antrum (18), with the remainder in the cardia, body, and prepyloric region (5, 5, and 6, respectively). Of the gross types, depressed lesions (types IIc and IIc+III) were most common (12 and 18, respectively). Histologically 18 undifferentiated and 32 differentiated EGC were found. Tumor size ranged from less than 0.2 to greater than 10.0 square cm. Invasion reached mucosa in 32 cases and submucosa in 18 cases; the only morphological characteristic correlating with depth of invasion was size. Submucosal carcinoma metastasized more readily to the regional lymph nodes: all 5 cases of metastasis were of this type. EGC size correlated with presence of ulceration. In a majority of cases, mucosa adjoining the EGC displayed atrophic gastritis and intestinal metaplasia. Seven signet ring cell carcinomas appeared in the series (5 in women); one case of EGC developed from severe atrophic gastritis. Of 18 patients operated greater than 5 yr ago, 16 have survived without recurrence, 1 died of pulmonary cancer 1 yr postoperatively, and 1 experienced recurrence 3 yr postoperatively. Of 26 patients operated 1-4.5 yr ago, 25 are alive and well and 1 has shown recurrence. (12 Refs)

22. CLINICOPATHOLOGICAL STUDIES OF LIVER CIRRHOSIS AND HEPATOCELLULAR CARCINOMA IN A GENERAL HOSPITAL.

Bartok I, Remenar E, Toth J, Duschanek P, Kanyar B
Dept. Pathology, Peterfy Hosp., P. O. Box 76, H-1441 Budapest, Hungary
Hum Pathol; 12(9):794-803 1981

Clinicopathological studies of 181 patients with liver cirrhosis undergoing autopsy in the pathology department of a municipal hospital between 1973 and 1976 are reported. The main etiological types were alcoholic (25.4%), HBsAg positive (14.9%), and cryptogenic cirrhosis (54.7%). Four patients had multifactorial and secondary biliary cirrhosis and one patient had congestive cirrhosis. The morphological characteristics of the condition and the age and sex distribution of the patients were analyzed in each etiological group. Hepatocellular carcinoma occurred in 28.7% of the cases, most frequently in association with HBsAg positive cirrhosis. Hepatocellular atypia was significantly more frequent in HBsAg positive than in other etiological types of cirrhosis and significantly more frequent in cases associated with hepatocellular carcinoma than in those not associated with it. (Author abstract) (61 Refs)

23. INTESTINAL METAPLASIA AND GASTRIC CARCINOMA.

Sipponen P
Dept. Pathology, Jorvi Hosp., SF-02740 Espoo 74, Finland
Ann Clin Res; 13(3):139-143 1981

The characteristics of subtypes of intestinal metaplasia (IM) in the stomach are reviewed and their relationship to gastric carcinoma (GCA) discussed. Features of IM with small-bowel-like properties and IM with colon-like properties are tabulated. The specificity of IM as an indicator of gastric carcinoma is low, although its specificity can be increased by histochemical separation of the subtypes of IM with colon-like properties. Gastroscopic biopsy specimens of different patient series and of representative samples from populations and subpopulations were studied in order to discover histochemical and other methods for closer characterization of the subtypes of IM and to evaluate their relations to gastric cancer. Interesting correlations between subtypes of IM, probable precancerous states of the stomach, and the gastric carcinoma itself were found. High-iron diamine (HID)-positive IM is suggested to be morphogenetically related to GCA, and this type of IM might be linked with the pathogenesis of GCA. These tentative conclusions, however, are only valid with regard to intestinal type

GCA. The specificity of HID-positive IM as an indicator of GCA is 94% and its predictive value for negative results is 84%. (22 Refs)

24. GASTRIC POLYPS AND GASTRIC CARCINOMA.

Laxen F
Div. Gastroenterology, Maria Hosp., SF-00180 Helsinki 18, Finland
Ann Clin Res; 13(3):154-155 1981

The association of the different types of polyps with gastric carcinoma and the development of carcinoma from benign polyps were investigated in 363 consecutive cases with endoscopically demonstrated polyp-like lesions. Discrimination between the different groups of adenomas, hyperplastic polyps and foveolar hyperplasia was often difficult; there were numerous transitional forms between the hyperplastic polyps and foveolar hyperplasia. These conditions might be different, morphologically related stages of the same process, which begins as simple hyperplasia of the glands. In some of the patients examined, hyperplastic polyps, polyps of the foveolar hyperplasia type, and inflammatory polyps disappeared spontaneously. It is probable that such polyps are caused by patchily disturbed cell kinetics of the foveolar epithelium: the renewal of such cells is more rapid than their destruction. The reversal of the disturbed cell kinetics should theoretically lead to the disappearance of such polyps. Gastric carcinoma was found in 27/363 cases (7.4%): in 38% of adenomas and 6.5% of hyperplastic polyps or foveolar hyperplasia. In 13 of the 27 cases, the gastric carcinomas were found in the gastric mucosa outside the polyps. It is suggested that the entire gastric mucosa should be considered diseased and possessing some malignant potential in the case of non-neoplastic polypoid lesions. (4 Refs)

25. LEIOMYOBLASTOMA OF THE STOMACH.

Lecomte P, Bruneton JN, Sicart M
Centre A. Lacassagne, 36 Voie Romaine, 06054 Nice Cedex, France
ROEFO; 135(1):57-60 1981

Seven cases of leiomyoblastoma of the stomach were reported. Patients ranged in age from 37 to 75 yr. Stomach radiography was always positive. All cases were benign, with follow-up periods of at least 2 yr. Leiomyoblastoma was reviewed based on 307 cases from literature. Tumors appeared to be of smooth muscle origin. Over 90% were located in the body or antrum of the stomach. Most were intramural (41.4%), but some were intraluminal (22.7%) or subserosal (25.7%). Tumors less than 5 cm in diameter were most likely to be benign, while those over 10 cm were most likely to be malignant. However, most cases (79%) were benign. Clinical findings included hemorrhage or anemia (51.8%), pain (30.9%), a palpable mass (20.8%), and weakness (17.3%). Low mitotic rates were a reasonably accurate indicator of benignity. Small tumors were removed surgically. Larger tumors were treated by partial gastrectomy. (71 Refs)

26. GRANULAR CELL TUMORS OF THE GASTROINTESTINAL TRACT AND PERIANAL REGION. A STUDY OF 74 CASES.

Johnston J, Helwig EB
(c/o Helwig) Dept. Gastrointestinal Pathology, Armed Forces Inst. Pathology, Washington, DC, 20306
Dig Dis Sci; 26(9):807-816 1981

Seventy-four patients with 75 examples of granular cell tumors occurring in the gastrointestinal tract and perianal region were studied. Twenty-four were located in the esophagus, 8 in the stomach, 3 in the small bowel, 4 in the appendix, 20 in the large bowel, and 16 in the perianal region. Nine cases had multiple tumors either occurring in the same area of the bowel or in other organs, mostly the skin. Approx 50% of the tumors occurring in the esophagus and perianal region showed varying degrees of acanthosis or pseudoepitheliomatous hyperplasia. In the perianal tumors the pseudoepitheliomatous hyperplasia was much more extensive and could be mistaken for squamous cell carcinoma. The world literature was reviewed and a total of 66 cases of granular cell tumors were reported in the area of study. In neither our 74 nor the other reported cases was there evidence of recurrence or malignant behavior of the tumors, thus confirming their benign biologic behavior. (Author abstract) (68 Refs)

27. COMPARISON OF LEIOMYOMA AND LEIOMYOSARCOMA ON THE BASIS OF DNA HISTOGRAMS.

Kimura O, Nishidoi H, Osaki Y, Miyano Y, Adachi H, Kaibara N, Koga S, Hashimoto K
First Dept. Surgery, Tottori Univ. Sch. Medicine, Tottori, Japan
Gan No Rinsho; 27(10):1205-1209,A-57 1981

Nuclear DNA content was measured with a microspectrophotometer in cells from five leiomyomas, four leiomyoblastomas, and two differentiated type leiomyosarcomas of the stomach, and one differentiated-type leiomyosarcoma of the small intestine resected from patients. Percentages of hypertriploid (over 3 c) and hypertetraploid (over 4 c) histograms were determined for each tumor type. Most of the gastric leiomyomas were less than 3 cm in diameter and occurred in the gastric corpus; hypertriploid and hypertetraploid histograms occurred in an av of 13.0% and 5.0%, respectively of the cells. Most of the leiomyoblastomas were greater than 4 cm in diameter and occurred in the gastric corpus or fundus; hypertriploid and hypertetraploid histograms were observed in 34.6% and 22.9%, respectively, of the cells. Hypertriploid and hypertetraploid histograms occurred in an av of 95.5% and 68.9%, respectively, of the leiomyosarcoma cells. On the basis of histograms, diagnosis of leiomyosarcoma was thought to be indicated by hypertriploids occurring in greater than 50% of histograms and hypertetraploids occurring in greater than 80% of the histograms. (11 Refs) (In JPN)

28. ANALYSIS OF LIVER CELL DYSPLASIA AND HEPATOMAS BY FEULGEN-DNA CYTOFLUOROMETRY.

Kagawa K
Third Dept. Internal Medicine, Kyoto Prefectural Univ. Medicine, Kamigyo-ku, Kyoto 602, Japan
Kyoto Furitsu Ika Daigaku Zasshi; 90(1):13-31 1981

To perform correlated cytofluorometric and histopathologic studies of liver cell dysplasia (LCD), cirrhotic liver tissues and hepatocellular carcinomas, a method for applying Feulgen-DNA cytofluorometry to paraffin-embedded tissues from autopsies has been developed. Autopsy liver specimens were fixed in neutralized formalin, and single cells were isolated with a Dounce homogenizer. The cells were treated with sodium dodecyl sulfate (0.5%, in double distilled water for 18-24 hr at 60 C and also with Carnoy's soln (methanol 3: acetate 1) for 15 min at 0-4C, to eliminate nonspecific cytoplasmic fluorescence. Smear preparations of the cells were Feulgen stained with pararosaniline hydrochloride. The nuclear DNA content of each liver cell was measured by an epiillumination cytofluorometer NIKON SPM-RF1. Cells from LCD, cirrhotic liver tissues and hepatomas of 15 autopsy cases of liver cirrhosis (including 10 cases of hepatoma) were analyzed by this method. Polyploid cells such as mononuclear tetraploid, mononuclear octaploid, and binuclear cells were increased in the cases of liver cirrhosis without either LCD nor hepatomas, compared with those of normal controls. The hepatocytes of the LCD area showed more marked polyploidization than those of the non-LCD area and cells intermediate between ploidy classes were not observed. On the other hand, the hepatoma areas consisted of many cells with intermediate values, so that the ploidy pattern of the hepatomas showed a unimodal and wide distribution with the peak value between diploid and tetraploid. The results indicate that (1) the polyploidization of the liver cells proceeds during the progression of the illness from chronic hepatitis to liver cirrhosis, (2) the LCD area consists of cells with dramatically advanced polyploidization, and (3) the ploidy pattern of hepatoma, which can be clearly distinguished by DNA-cytofluorometry from that of the LCD area, shows an increased number of cells in the DNA synthetic phase, and also shows the presence of aneuploid cells. (37 Refs) (In JPN)

29. A STUDY OF THE RELATIONSHIP BETWEEN THE MITOTIC ACTIVITY OF CANCER CELLS AND VARIOUS FACTORS OF GASTRIC CANCER PATIENTS.

Tabuchi Y, Takiguchi Y, Murayama Y, Saitoh Y
First Dept. Surgery, Kobe Univ. Sch. Medicine, Ikuta-ku, Kobe 650, Japan
Nippon Geka Gakkai Zasshi; 82(1):42-50 1981

An in vivo stathmokinetic method was used to analyze the mitotic activity of cancer cells from 47 gastric cancer patients. The effect of cellular reaction in cancer tissues on the mitotic activity of cancer cells was examined. The relationship between general factors of the patients such as immunologic activity, changes of protein metabolism and the mitotic activity of cancer cells was also examined. The following results were obtained. An inverse correlation was found between the mitotic activity of cancer cells and the degree of lymphoid cell infiltration in cancer tissues. There was a tendency to a decrease in the mitotic activity of cancer cells paralleling an increase in the degree of delayed skin hypersensitivity to purified protein derivative and phytohemagglutinin and in the number of lymphocytes in peripheral blood. Inverse correlations between the mitotic activity of cancer cells and the values of Hb, hematocrit, albumin and ratio of albumin/globulin were found. Cancer cells showed a tendency to an increase in mitotic activity paralleling an increase in alpha1 and alpha2 globulin of peripheral blood. Highly significant correlations between the mitotic activity of cancer cells and the activity of lactic dehydrogenase (LDH) and its isoenzymes (LDH 3-5) in peripheral blood were observed. These results suggest the possibility that the mitotic activity of cancer cells is regulated by the infiltrating lymphoid cells in cancer tissue and promoted by impairment of cellular immunity. Moreover, it may be estimated that protein metabolism and the function of RBC formation are impaired and that the activity of LDH derived from cancer cells increases in peripheral blood, in parallel with the increase in the mitotic activity of cancer cells. (50 Refs) (In JPN)

30. ANALYTICAL STUDIES ON GROWTH OF HUMAN GASTRIC CANCER.

Kohli Y, Kawai K, Fujita S
Dept. Internal Medicine, Kyoto Prefectural Univ. Medicine, Kawaramachi-Horokoji, Kamikyo-ku, Kyoto 602, Japan
J Clin Gastroenterol; 3(2):129-133 1981

The first comparative study of the doubling time (tD) of early and advanced gastric cancer and of tumors metastatic to the abdominal wall were carried out, using cross diameters on serial roentgenographs taken over 3 mo prior to surgical treatment in 16, 4, and 3 patients, respectively, and the gross appearance of early gastric cancer (EGC), type IIb, is described from 65 cases retrospectively or prospectively followed up by endoscopy. The tD of EGC ranged from 577 to 3,462 days, with the tD of type IIc + III and III + IIc being longer than the tD of type IIc or IIc + IIa. The tD of advanced gastric cancer (AGC) was 69-305 days and of tumors metastatic to the abdominal wall, 17.7-60.2 days. A schematic showing the pathways and time lines for the progression of EGC was developed from the data on the 65 patients followed up endoscopically, showing the evolution of type IIb into type IIa or IIc (requiring greater than 2 yr); of type IIb into Borrmann type IV (av time, 19 mo); of type IIc or type IIc + IIa into Borrmann types II, III, or IV (av time, 22-37 mo); of type III + IIc, IIc + III, or III into AGC (av time, 10-15 mo); and of type IIa + IIc to Borrmann type II or III (av time, 6.5-12 mo). The study identified abnormal redness or discoloration of the gastric mucosa as a potentially important endoscopic sign in the early detection of gastric cancer; a case report of such detection is given. The use of direct visualization aided by the blue dye-spraying method is advocated. The results are compared with the previously published literature. (26 Refs)

31. THE MORPHOLOGY AND DYNAMICS OF THE GASTRIC MUCOSA AFTER PARTIAL GASTRECTOMY.

Saukkonen M, Sipponen P, Kekki M

Div. Gastroenterology, Second Dept. Medicine, Univ. Helsinki, SF-00290 Helsinki 29, Finland

Ann Clin Res; 13(3):156-158 1981

The morphology and dynamics of the gastric mucosa were studied in 121 patients with duodenal ulcers who had Billroth II gastrectomies 2, 5, 10, 15, and 20 yr before. Compared with controls, these patients had significantly more intestinal metaplasia, epithelial dysplasia, hyperplasia, and cyst formation around the gastroenterostomy. These changes, in addition to achlorhydria and regurgitation with subsequent bacterial growth and nitrosamine production, are probably related to the pathogenesis of stump carcinoma. (3 Refs)

32. HISTOPATHOLOGICAL EFFECTS OF PREOPERATIVE ADMINISTRATION OF ADRIAMYCIN IN ESOPHAGEAL CANCER.

Kabuto T, Taniguchi K, Furukawa H, Iwanaga T, Aoki Y, Terasawa T, Taniguchi H

Center for Adult Diseases, Osaka, Higashinari-ku, Osaka 537, Japan

Gan To Kagaku Ryoho; 8(2):285-289 1981

In order to evaluate the effectiveness of adriamycin in esophageal cancer, a histopathological study was carried out on surgical specimens obtained from 14 patients given adriamycin preoperatively for esophageal carcinoma (squamous cell carcinoma). Thirty mg of adriamycin was administered weekly by rapid injection for 2 or 3 wk (total dose of 60 mg or 90 mg). In 10 out of 14 cases, degenerative changes of neoplastic cells in the primary lesions were observed. The degenerative changes were marked in five cases (36%), in which the area of degenerative change extended beyond two-thirds of the lesions. Also, degenerations were seen in half of the metastatic lymph nodes. From these findings, adriamycin seemed to be effective on esophageal cancer. (Author abstract) (7 Refs) (In JPN)

33. ELECTRON MICROSCOPIC AND MICROSPECTROPHOTOMETRIC OBSERVATIONS IN SCIRRHOUS CARCINOMA OF THE STOMACH.

Iida F, Nagata T
Dept. Surgery, Kofu Municipal Hosp., 14-6, Saiwai-cho, Kofu 400, Japan
Jpn J Clin Oncol; 11(1):39-49 1981

An attempt was made to clarify the developmental behavior of scirrhous carcinoma (SC) through the use of electron microscopic and microspectrophotometric technics for estimating the DNA content of cancer cells in nine patients with SCs and five patients with well-differentiated adenocarcinomas (ACs). Electron microscopic observation of SCs revealed marked proliferation of collagen fibrils. Damaged cancer cells scattered along the collagen fibrils were prominent findings in the deep area of the lesion, but were rarely seen in the superficial and peripheral areas. In ACs, proliferation of collagen fibrils occurred to some extent, but not to the extent seen in SCs. The DNA distribution patterns in SCs, varied according to the area of the carcinoma. In the superficial and peripheral areas, the DNA content of the nuclei of cancer cell had a much wider range than that of normal tissues. Two peaks were found at the hyperdiploid and hypertetraploid ranges. The percentage of nuclei below the hyperdiploid range was higher in the deep area than in the other two areas in all nine cases. In the ACs, the histogram showed varying distributions of one to two peaks. Differences in the DNA distribution pattern according to area were not discernible. The percentages of nuclei below the hyperdiploid range were found to be almost identical among the three areas. The results suggested that the scirrhous area of the carcinoma has little significance for tumor growth and that growth can be determined from the scattered cancer cells in the edematous stroma at the periphery of the lesion. (11 Refs)

34. GASTRIC CANCER: PROGNOSTIC ASPECTS.

Branchini L, Tosi F, Scandroglio I
Divisione di Chirurgia Generale, Ospedale Provinciale di Busto Arsizio, Busto Arsizio, Italy
Minerva Chir; 36(11):759-764 1981

In the 10 yr period 1965-1974, 350 patients with gastric cancer were treated surgically: 60% of operations were curative, 19% palliative, and 21% exploratory. Relationship between prognosis and specific factors is analyzed. The 5-yr survival rate (SR) was 19.6% for women and 17.8% for men. Incidence of disease was highest in 60-70 yr-old (42%) and 50-60 yr-old (28%) patients; SR was best at 40-50 yr (25%) and reduced greater than 60 yr (18-19%) and less than 40 yr (14%). Disease location was 56% distal, 22% corpus, 14% diffuse, and 8% proximal. SR was highest for the distal region (34%); lower SR was observed for corpus (18.5%) and proximal (7%) regions, and none of the diffuse cases survived. Incidence of cancer according to size was: 37% less than 4 cm, 36% greater than 4 cm, and 26% palpable. SR was greatest for those cancers less than 4 cm (33%), 14% greater than 4 cm, and only 3% for palpable. Classification by Borrmann macroscopic type revealed 22% type I, 19% type II, 51% type III, and 7% type IV. SRs were respectively 32%, 44%, 8%, and 0%. Histologic types were most often intestinal adenoma (66%; SR 22%) and diffuse undifferentiated cancer (30%; SR 16%). In the absence of metastases 48% survived 5 yr, but in their presence only 10% survived that long. Ascites, metastatic intestinal invasions, and infiltration of adjacent organs do not contraindicate surgery. Radical surgery may sometimes yield surprising results. (18 Refs) (In ITA)

35. PROBLEMS IN THE THERAPY OF GALLBLADDER CANCER (MEETING ABSTRACT).

Mizuno Y, Satomura K, Kato H, Nakamoto K, Matsukawa Y, Nakajima Y, Hanafusa T, Maruhashi K, Kohno M, Nakazora M, Tanaka K, Higasa Y
Second Dept. Surgery, Faculty Medicine, Kyoto Univ., Sakyo-ku, Kyoto 606, Japan
Nippon Geka Gakkai Zasshi; 82(Suppl):246 1981

The 35 gallbladder cancers of patients operated on at this facility were classified by stage according to the draft for the General Rules for the Surgical Study on Cancer of Biliary Tract, and their prognosis was examined. Complication with gallbladder cancer among 4,454 gallstone cases was also examined. Of the 35 gallbladder cancers, 2 were stage I, 4 stage III and 27 stage IV. Although extended resection, chemotherapy, particularly injection into the local vein and portal vein by means of a catheter, and large doses of betatron were used in combination for patients with stage III and IV cancers, all of them died within 1 1/2 yr. The two patients with stage I cancer were still alive 2 yr after surgery. Of the 4,454 patients who had surgery to remove gallstones, 0.9% had a complication with gallbladder cancer. Gallbladder cancer was diagnosed before surgery in only four (10%) of these patients, most of the cancers being diagnosed during or after surgery. The older the patients, the more they were inclined to have a complication with gallbladder cancer, this tendency being particularly conspicuous for women. Cystectomy should be performed aggressively on elderly patients having gallstones. (no Refs) (In JPN)

36. TRACHEOESOPHAGEAL FISTULAS SECONDARY TO CARCINOMA OF THE ESOPHAGUS.

Fitzgerald RH, Bartles DM, Parker EF
Div. Radiation Therapy, Medical Univ. South Carolina, 171 Ashley Ave., Charleston, SC, 29403
J Thorac Cardiovasc Surg; 82(2):194-197 1981

The survival of 25 patients seen at the Medical University of South Carolina with tracheoesophageal fistulas (TEF) secondary to primary carcinoma of the esophagus is analyzed. A history of irradiation to the fistulous area did not correlate with worse prognosis in this group when compared to those who had no prior irradiation. Aggressive therapy, when possible, was associated with longer survival. (Author abstract) (10 Refs)

37. THE HEPATOMAS.

Bogliaccini G, Pomi J, Bagnulo H, Praderi R
Clinica Quirurgica '3'. Hospital Maciel, Facultad de Medicina, Juan Paullier 1110, Apto 16, Montevideo, Uruguay
Cir Urug; 51(2):127-130 1981

The hepatomas are of low frequency in Uruguay. The 33 cases were of the 438,700 patients registered in Hospitals between 1951-1970 and only 25 had hepatomas or 0.005%. The 33 cases presented were from 9-80 yr, most were 50-70 yr and av age was 56.7 yr. The majority 28 patients were men and only 5 women. There was a high incidence 45% of cirrhosis, all cases were men. The 29 were hepatocarcinomas and 4 cholangiocarcinomas. Of the 16 patients that had exploratory surgery, 5 were resected and one of this last group was still living 25 mo later, working and in excellent state of health. (20 Refs) (In SPA)

38. CONSIDERATION OF PREOPERATIVE COMBINED THERAPY FOR ESOPHAGEAL CANCER: AN ENDOSCOPIC ESTIMATION OF THE EFFECTIVENESS OF PREOPERATIVE COMBINED THERAPY.

Kouzu T, Kuga K, Isono K, Onoda S, Ishikawa T, Yamazaki Y, Maruyama M, Takahashi T, Taniguchi T, Uematsu S, Odaka M, Sato H
Second Dept. Surgery, Sch. Medicine, Chiba Univ., Inohana, Chiba 280, Japan
Nippon Shokaki Geka Gakkai Zasshi; 14(1):21-26 1981

Of the esophageal cancers seen between 1969 and 1978, 113 which had been examined carefully by endoscopy were first divided into four types according to the shape of the elevation of the lesion on the oral side as follows: Type I, constricted mucosal surface and elevated part of the main lesion; Type II, no such constriction but sharp elevation; Type III, slight peripheral elevation on boundary with oral mucosal surface; and Type IV, the boundary slightly elevated. Preoperative combined therapy was ineffective or slightly effective (Ef1), moderately effective (Ef2) and markedly effective (Ef3) for the tumors with elevation of the main lesion on the oral side for 52.2%, 38.1% and 9.7% of the patients, respectively. There was no significant difference in the frequency of the patients with Ef2 or Ef3 among Types I, II and III. But for Type IV, Ef1 accounted for 70% and Ef2 or Ef3 for 30%. Next, the cancer was divided into four types from the appearance of the exposed part of the elevated peripheral surface of the main lesion, the whole, half or more, less than half and none of the elevated peripheral surface remaining unstained with Lugol's soln, in Types 1, 2a, 2b and 3, respectively. Ef3 was obtained in 18.4% and 12.9% of the Type 1 and 2a cases, respectively, but none of the Type 2b or 3 cases had Ef3. Third, the extension pattern of the main lesion on the oral side was divided into three types, spindle cell, ellipse and concentric circle. Ef1 accounted for 40.6% and Ef2 or 3 for 59.4%, of the spindle cell and concentric circle types, while Ef1 accounted for 67.3% of the ellipse type. The type of the above characters least affected by preoperative combined therapy was classified as index 0, the degree of response indicated by an increasing index number, and the sum of these indices was used as the expected index number for combined therapy. There were more affected cases with a higher index number for the various therapies used, indicating that prognosis can be predicted from endoscopic findings before surgery. (11 Refs) (In JPN)

39. A STUDY OF CARCINOMAS OF THE GALLBLADDER, PARTICULARLY SQUAMOUS CELL CARCINOMA (MEETING ABSTRACT).

Kato H, Tanimura H, Kobayashi N, Mukaihara S, Miki K, Sekiya T, Yoshida K, Takahashi H, Saito T, Higasa Y
Second Dept. Surgery, Faculty Medicine, Kyoto Univ., Sakyo-ku, Kyoto 606, Japan
Proceedings of the 9th Annual Meeting of Japanese Association of Biliary Tract Surgery held in Tokyo, 10 April, 1981. Japanese Association of Biliary Tract Surgery, Tokyo 162, Japan, 104 pp., 1981.

Twelve male and 24 female patients seen between 1954 and 1980 had carcinoma of the gallbladder. Histologically, 21 had adenocarcinoma (Group A), 8 had undifferentiated carcinoma and 3 had squamous cell carcinoma. Of 4,454 patients who had gall stones, 38 (15 males and 23 females) had cancer complications (Group B). Three in 38 patients had squamous cell carcinoma. The six squamous cell carcinoma cases including these three were studied in detail. Four of the patients were male and two were female. Of the patients who had gall stones and carcinoma complications, carcinoma of the gallbladder was not diagnosed until during or after surgery in 34, and gallbladder cancer was considered difficult to diagnose before surgery by drip-infusion cholangiography (DIC), endoscopic retrograde cholangiopancreatography (ERCP), percutaneous transhepatic cholangiography or ultrasonography. DIC was performed on all six of the patients who had squamous cell carcinoma, ERCP on one, ultrasonography on two, and computed tomography on one, but carcinoma of the gallbladder was diagnosed in only one patient. Of the 36 patients in Group A, 17 had nonresectable cancer at the time of laparotomy and curative resection could be performed on 12. The primary lesion could be resected in five of the patients with squamous cell carcinoma, but curative resection could be performed in only three. All of the patients with stage III or IV cancer in Group A died within 1 yr, and only two patients with Stage I carcinoma localized in the gallbladder (adenocarcinoma and undifferentiated carcinoma) were still alive 14 and 3 yr after surgery. Of the six patients with squamous cell carcinoma, one with Stage I carcinoma survived for 2 yr and the others died within 4 mo after surgery. (no Refs) (In JPN)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

40. CARCINOEMBRYONIC ANTIGEN IN THE MANAGEMENT OF GASTRIC CANCER PATIENTS.

Tomoda H, Furusawa M, Ohmachi S, Seo Y, Matsukuchi T, Miyazaki M, Kanashima R
Dept. Surgery, Natl. Kyushu Cancer Center, 595, Notame, Minami-ku, Fukuoka 815, Japan
Jpn J Clin Oncol; 11(1):69-74 1981

The results of investigations on carcinoembryonic antigen (CEA) levels in 226 patients with gastric cancer (73 Stage I, 12 Stage II, 71 Stage III, and 70 Stage IV) and the usefulness and limitations of their determination are described. The primary lesion was resectable in 203 cases (148 curative and 55 noncurative resections) and unresectable in 23 cases. Preoperatively, elevated CEA levels (5 ng/ml or higher) were found in 23.9% of the patients. The levels were high in 56.5% of the patients with unresectable tumors and in 20.2% of those with resectable tumors. Elevated levels were found in 34.5% of the patients receiving noncurative surgery and in 14.9% of those who had curative surgery. Elevated CEA levels were found in 8.2% of the patients in Stage I, 25% in Stage II, 23.8% in Stage III, and 40% in Stage IV. The differences between Stages I and III and I and IV were significant. Elevated CEA levels were found in 68.6% of the 16 patients with liver metastasis, and in 20.5% of the 210 patients without liver metastasis. In 24 patients who had high CEA levels before gastrectomy (12 curative and 12 noncurative), the CEA levels 1 mo after surgery were normal in 10 of the patients receiving curative surgery and in 1 of the patients receiving noncurative surgery. (28 Refs)

41. LOCALIZATION AND CONCENTRATION OF CARCINOEMBRYONIC ANTIGEN (CEA) IN GASTROINTESTINAL TUMORS: CORRELATION WITH CEA LEVELS IN PLASMA.

Wagener C, Muller-Wallraf R, Nisson S, Groner J, Breuer H
(c/o Breuer) Institut fur Klinische Biochemie, Sigmund-Freud Strasse 25, 5300 Bonn 1, W. Germany

JNCI; 67(3):539-547 1981

In 50 patients with gastrointestinal carcinomas, the following tumor parameters were studied: the concentration and localization of carcinoembryonic antigen (CEA) in tissue, extension, invasion, infiltration, differentiation, and necrosis. CEA concentrations were measured in plasma samples of all patients. In seven patients with gastric carcinomas, CEA concentrations in tissue were low. Generally, only single cells or cell groups were CEA-positive. Elevated CEA levels in plasma resulted mainly from distant metastases and not from the primary tumor. In 43 colorectal carcinomas, CEA concentrations in tissue varied between 1.5 and 472 ug/g tissue. They were closely related to the degree of accumulation of CEA-positive necrotic material in the neoplastic glands. In 35 patients with colorectal carcinomas without CEA producing distant metastases, preoperative CEA levels in plasma were normal when tumor necrosis and perineural invasion were absent and CEA concentrations in tissue were low. CEA levels in plasma were regularly elevated when the tumor showed considerable necrosis in the presence of high CEA concentrations in tissue. (Author abstract) (22 Refs)

42. PLASMA CARCINOEMBRYONIC ANTIGEN IN THE DIAGNOSIS AND MANAGEMENT OF PATIENTS WITH HEPATOCELLULAR CARCINOMA.

Melia WM, Johnson PJ, Carter S, Munro-Neville A, Williams R
Liver Unit, King's Coll. Hosp. and Medical Sch., Denmark Hill, London SE5 8RX, England

Cancer; 48(4):1004-1008 1981

The value of serial carcinoembryonic antigen (CEA) measurements as a marker of disease progression or in monitoring treatment was investigated in patients with hepatocellular carcinoma. Of 40 patients, including 16 with normal serum alphafetoprotein (AFP) concentrations, 29 (72.5%) had abnormal plasma CEA at presentation. Although this was more common in patients with pre-existing cirrhosis, the mean and range of plasma CEA were similar in patients with and without pre-existing hepatic disease. There was no correlation between plasma CEA and any biochemical parameter of hepatic function, although plasma CEA concentrations were significantly lower in patients with well-differentiated tumors. CEA concentrations increased in 71% of patients who had no response to cytotoxic drugs, but CEA also increased in 62.5% of those patients who did respond. Plasma CEA concentrations were elevated in 62.5% of patients with normal and 79% of patients with raised serum AFP on admission to the hospital. There was no correlation between individual AFP and CEA concentrations. Although elevated plasma CEA levels may be of diagnostic value in patients with hepatocellular carcinoma in the absence of pre-existing hepatic disease, and in those with normal serum AFP, our findings indicate that it does not behave as a true tumor marker. (Author abstract) (11 Refs)

43. CARCINOEMBRYONIC ANTIGEN LEVELS AS AN INDICATOR OF THE PRIMARY SITE IN METASTATIC DISEASE OF UNKNOWN ORIGIN.

Koch M, McPherson TA
Dept. Medicine, Cross Cancer Inst., 11560 University Ave., Edmonton, Alberta, T6G 1Z2, Canada

Cancer; 48(5):1242-1244 1981

In 542 patients with metastatic disease arising from a known primary site, elevated CEA levels (greater than 10 ng/ml) were most often associated with metastatic disease originating from entodermally derived organs, breast, and mucinous ovarian primaries. This observation held true, in general, in a small series of 32 patients with metastatic disease arising from a primary site that had been unknown, but that was eventually identified. Thus, although a CEA level below 10 ng/ml is of no use in pointing to a particular primary site, a value above 10 ng/ml suggests the site is more likely to be in an entodermally derived organ, breast or ovary containing a mucinous carcinoma. If liver metastases are present, there is an increased probability that the primary site will be found in the large bowel or pancreas. (Author abstract) (9 Refs)

44. ONCOFETAL ANTIGEN-I: DISTRIBUTION IN HUMAN TUMORS.

Rees WV, Irie RF, Morton DL
(c/o Irie) Div. Oncology, 54-140 CHS, Univ. California Los Angeles Sch. Medicine, Los Angeles, CA, 90024

JNCI; 67(3):557-562 1981

Oncofetal antigen-I (OFA-I) is a human tumor-associated fetal antigen that cross-reacts with fetal brain. The biological distribution of this antigen was studied in a variety of histologic types of human tumors and normal tissues. A total of 170 human tumors and 89 normal tissues obtained from biopsied and autopsied specimens were tested by immune adherence absorption assay. The antigen was most prevalent in malignant melanomas (82%); next in order of incidence were lung carcinomas (71%), sarcomas (61%), brain tumors (58%), and breast carcinomas (53%). However, OFA-I was found in only 15% of gastrointestinal tumors. The four hepatoma specimens tested were negative for OFA-I. OFA-I was also present in metastases and normal-appearing tissues of patients with OFA-I positive tumors but was not found in normal tissues from noncancer patients. These studies demonstrated that OFA-I is widely distributed among human tumors. It appears to be more prevalent in tumors of ectodermal and mesodermal origin. (Author abstract) (34 Refs)

45. A PANCREATIC ONCOFETAL ANTIGEN: ITS PARTIAL PURIFICATION AND CLINICAL APPLICATION.

Homma T, Oguchi H, Kawa S
Second Dept. Internal Medicine, Shinshu Univ. Sch. Medicine, Asahi 3-1-1, Matsumoto, 390, Japan

Gastroenterol Jpn; 16(3):268-274 1981

Studies on the purification, characterization and clinical application of pancreatic oncofetal antigen were reported. This antigen was purified from fetal pancreas, and migrated in the beta-region on electrophoresis. Its mol wt was about 80 x 10(4) daltons on gel filtration with a Sephacryl S-300. This antigen is clearly different from other oncofetal antigens such as alphafetoprotein, carcinoembryonic antigen or ferritin. Clinically, this pancreatic oncofetal antigen was positive in sera of 68.4% of the patients with pancreatic cancer. However, an elevated level of this antigen was also observed in the sera of some patients with biliary tract cancer, colon cancer or gastric cancer. The antigen was also found in pancreatic juice obtained from patients with pancreatic cancer in almost the same incidence as in their sera. It is suggested that a pancreatic oncofetal antigen assay of sera and pancreatic juice in combination with other oncofetal antigens is valuable for the diagnosis and monitoring of the clinical course of pancreatic cancer. (Author abstract) (15 Refs)

46. OESTROGEN RECEPTOR PROTEINS IN MALIGNANT AND FETAL PANCREAS.

Greenway B, Iqbal MJ, Johnson PJ, Williams R
Liver Unit, King's Coll. Hosp., Medical Sch., London SE5 8RX, England
Br Med J; 283(6294):751-753 1981

High levels of high-affinity estrogen binding were detected in cytosolic and nuclear fractions of tumor tissue from six patients with pancreatic carcinoma. Similar binding was found in fetal but not in normal adult pancreas, making derepression of fetal genes a possibility. Specific androgen binding was not detectable. These findings suggest that anti-estrogen treatment may offer a new approach to the treatment of pancreatic carcinoma. (Author abstract) (20 Refs)

47. PREDICTION OF PROGRESSIVE DISEASE IN ZOLLINGER-ELLISON SYNDROME - COMPARISON OF AVAILABLE PREOPERATIVE TESTS.

Fabri PJ, Johnson JA, Ellison EC
Dept. Surgery, Ohio State Univ. Coll. Medicine, 410 West Tenth Ave., Columbus, OH, 43210
J Surg Res; 31(2):93-97 1981

Availability of alternative methods of treatment of the Zollinger-Ellison syndrome (ZES) has necessitated a reevaluation of that disease. To evaluate ability of preoperative tests to predict postoperative clinical course, serum samples (frozen since collection) obtained fasting and after calcium stimulation in 18 patients with documented ZES with at least 5 yr of postoperative follow-up were reassayed, fractionated into molecular components by gel filtration through a 200 x 1-cm Sephadex G-50 superfine column, and quantitated by assay with an antibody with equimolar recognition of the major C-terminal peptides. Total gastrin immunoreactivity (IRG), response of serum gastrin to calcium stimulation (SIRG), or the combination of these two factors are the most frequent criteria for estimating postoperative course and magnitude of disease. These measurements were compared to the percentage of G-17 (G-17/IRG) by the methods of R. S. Galen and S. R. Gambino (Beyond Normality; The Predictive Value and Efficiency of Medical Diagnoses, New York: Wiley 1975) (Sensitivity, Specificity, Predictive value of positive and negative tests, Efficiency). Percentage G-17 greater than 20% of IRG is the most sensitive (100%) and specific (91%) method of evaluating extent of disease preoperatively in patients with ZES. (Author abstract) (13 Refs)

48. IMMUNOCYTOCHEMISTRY AND ELECTRON MICROSCOPY OF AN ARGENTAFFIN ENDOCRINE TUMOUR OF THE PANCREAS.

Wilander E, El-Salhy M, Willen R, Grimelius L
Dept. Pathology, Univ. Uppsala, P.O. Box 533, S-751 22, Uppsala, Sweden
Virchows Arch [Pathol Anat]; 392(3):263-269 1981

An endocrine pancreatic tumor that had not caused any endocrine symptoms was examined by histological, immunocytochemical and electron microscopic techniques. The majority of the tumor cells were argentaffin and contained secretory granules of the enterochromaffin cell type. Immunocytochemically a minority of tumor cells reacted to antisera against beta-endorphin, met- and leu-enkephalin, gastrin, somatostatin and ACTH. The tumor was thus multihormonal, and appeared to be more closely related to the classic Carcinoid tumors of the mid-gut than to most pancreatic endocrine tumors. (Author abstract) (20 Refs)

49. GASTRIC JUICE N-NITROSAMINES IN HEALTH AND GASTRODUODENAL DISEASE.

Reed PI, Haines K, Smith PL, House FR, Walters CL
Gastrointestinal Unit, Wexham Park Hosp., Slough, Berkshire SL2 4HL, England
Lancet; 2(8246):550-552 1981

The concentrations of total extractable N-nitroso compounds, pH, and nitrite levels were measured in fasting gastric juice, which was also cultured for bacteria, from 50 healthy volunteers and 217 patients with common upper gastrointestinal complaints. The concentrations of N-nitroso compounds and pH levels rose significantly with age. Sex and cigarette smoking had no significant effect. There was a positive correlation between pH and N-nitroso concentration, and between pH and an increase in the concentration of nitrites. A significant relation was demonstrated between raised N-nitroso and nitrite levels and growth of nitrate reductase-positive microorganisms. These results demonstrate for the first time in man the interrelations of N-nitrosamine concentration, pH, gastric juice nitrite, and nitrate-reducing bacteria. The findings are considered in relation to the risks of development of gastric cancer in man. (Author abstract) (30 Refs)

50. EFFECT OF CIMETIDINE ON GASTRIC JUICE N-NITROSAMINE CONCENTRATION.

Reed PI, Haines K, Smith PL, House FR, Walters CL
Gastrointestinal Unit, Wexham Park Hosp., Slough, Berkshire SL2 4HL, England
Lancet; 2(8246):553-556 1981

Total extractable N-nitroso compounds, pH, and nitrite levels were measured in, and microorganisms were cultured from, the fasting gastric juice of 140 patients taking the H2-receptor antagonist cimetidine and from 267 subjects, including 50 healthy volunteers, not taking cimetidine. Significantly higher mean N-nitrosamine concentrations and pH levels were demonstrated in the cimetidine-treated patients; N-nitrosamine concentration increased with pH. In 30 patients studied, cimetidine treatment significantly increased gastric pH and N-nitrosamine concentrations, while in 23 patients withdrawal of cimetidine treatment resulted in a significant reduction of pH but not of N-nitrosamine con centrations. The gastric juice nitrite level was often raised and nitrate-reducing bacteria cultured were similar to those associated with other causes of hypochlorhydria. These results demonstrate for the first time a relation between gastric juice N-nitrosamine concentration, pH, and cimetidine treatment, and the findings are discussed in relation to gastric cancer induction. (Author abstract) (32 Refs)

51. CLINICAL AND SECRETORY DIFFERENCES IN PANCREATIC CANCER AND CHRONIC PANCREATITIS.

Goodale RL, Condie RM, Gajl-Peczalska K, Taylor T, O'Leary J, Dressel T, Borner JW, Frick MP, Fryd DS
Univ. Minnesota Medical Sch., Box 379 Mayo Memorial Building, 420 Delaware St. S.E., Minneapolis, MN, 55455
Ann Surg; 194(2):193-198 1981

The differential diagnosis between chronic pancreatitis and pancreatic cancer can be very difficult. In 60 patients with either of these conditions, who had satisfactory ERCP study, clinical features were correctly matched with the final diagnosis by discriminant analysis in 44 (73%). The sensitivity of ERCP radiographic findings in pancreatic cancer was 80% and sensitivity of cytology was 54%. To see if exocrine function was specific for cancer, fresh pancreatic secretions were aspirated in 27 patients at the time of ERCP. By isoelectric focusing, a pattern of extreme zymogen depletion was observed in chronic alcoholic pancreatitis (Group 1), pancreatic cancer (Group 2), and chronic nonalcoholic pancreatitis (Group 3). The three groups were not distinguishable. By contrast, significant changes in albumin, IgG and IgA concentrations were seen in Group 2. The albumin level was over 10-fold greater than in Groups 1 and 3 (p less than 0.02 and less than 0.05). The IgG was 7-fold and 2-fold greater (p less than 0.01 and greater than 0.2) and the IgA was 15-fold and 6-fold greater (p less than 0.002 and less than 0.05) than in Groups 1 and 3, respectively. The two groups of pancreatitis had similar concentrations of albumin and IgA. The ratio of albumin to IgG was also different in Group 2 from the other groups, suggesting different mechanisms for the appearance of proteins in pancreatic secretions. Nonzymogen protein levels can distinguish chronic pancreatitis from pancreatic cancer, and further study of them may identify useful tumor-specific markers. (Author abstract) (31 Refs)

52. STUDIES OF DNA SYNTHESIS AND PLOIDY PATTERN OF HEPATOCYTES IN LIVER CIRRHOSIS AND HEPATOMA BY RADIOAUTOGRAPHY AND MICROSPECTROPHOTOMETRY.

Koike Y, Suzuki Y, Nozawa K, Kamijyo K, Yamamura S, Akahane Y, Kiyosawa K, Nagata A, Huruta S, Nagata T
Second Dept. Internal Medicine, Faculty Medicine, Shinshu Univ., Matsumoto-shi, Nagano Pref. 390, Japan
Kanzo; 22(3):413-421 1981

In order to determine the cell kinetics of hepatocytes in liver cirrhosis and hepatoma, both the DNA synthesis, by means of 3H-thymidine (3H-TdR) radioautography, and the DNA content of hepatocytic nuclei, by means of Feulgen-microspectrophotometry, in cirrhosis and the noncancerous portion of hepatoma with cirrhosis were studied. The incorporation of 3H-TdR into hepatocytes in the noncancerous portion of hepatoma as well as cirrhosis which developed into hepatoma 3 yr later increased markedly. The ploidy classes as measured by microspectrophotometry were widely distributed in the noncancerous portion of hepatoma. Moreover, in the normal liver the DNA content of each nucleus a binucleate cell was almost the same, in contrast with that in paired nuclei the noncancerous portion of hepatoma, which was as different as in hepatoma cells. The ploidy pattern of hepatocytes in patients with liver cirrhosis who had developed hepatoma during follow-up periods of several mo to several yr appears to resemble that in the noncancerous portion of hepatoma. (20 Refs) (In JPN)

53. PRIMARY LIVER CELL CARCINOMA COMPLICATING AUTOIMMUNE CHRONIC ACTIVE HEPATITIS.

Jakobovits AW, Gibson PR, Dudley FJ
Gastroenterology Diagnostic Service, Alfred Hosp., Prahran, Victoria, 3181, Australia
Dig Dis Sci; 26(8):694-699 1981

In a group of 50 patients seen with primary liver cell carcinoma over a period of 5 yr, 38 had cirrhosis. In four patients the cirrhosis was due to autoimmune chronic active hepatitis. None of the patients had markers of hepatitis B virus infection, but in three of the four, serum autoantibodies were present. Coexisting autoimmune disease was present in two. Corticosteroids induced remission in all patients, and the liver disease appeared quiescent at the time primary liver cell carcinoma developed. (Author abstract) (16 Refs)

54. IN VIVO AUGMENTATION OF NATURAL KILLER (NK) ACTIVITY BY A STREPTOCOCCAL PREPARATION, OK-432: CHARACTERIZATION OF EFFECTOR CELLS AND INDUCTION OF INTERFERON IN SERA.

Wakasugi H, Miyata M, Morioka Y, Oshimi K, Kasahara T, Takahashi K, Saito M, Ebina T
Dept. Surgery, Jichi Medical Sch., Japan
Nippon Gan Chiryo Gakkai Shi; 16(3):433-446 1981

The effects of pre- and/or postoperative treatment with streptococcal preparation OK-432 on natural killer (NK) cell activity and interferon titers were studied in 40 patients with stomach, breast, pancreas, or colon cancer. The patients received a first OK-432 course beginning on postoperative days 7-35 (Group I) or a second course beginning on postoperative days 8-52 (Group II), 6-20 (Group III), or 5-43 (Group IV). Patients in Groups I, II, and III showed significantly augmented killer cell activity within 3 days of initial OK-432 inoculation. Characterization of effector cells from Group IV patients showed that they were NK cells (T and non-T cells and IgG-Fc receptor-positive cells). Induced IF titers studied in Groups I, II, and III did not correlate with levels of augmented NK activity. Four Group III subgroups were distinguished according to degree of NK activity and IF titers: patients with low IF titers that declined with augmented NK activity, patients with low titers that increased with augmented NK activity, patients in whom IF was detected continuously without NK augmentation, and patients with augmented NK activity but no significant IF induction. (40 Refs) (In JPN)

55. INFLUENCE OF TOTAL PARENTERAL NUTRITION (TPN) ON SOME IMMUNE PARAMETERS IN MALNOURISHED SURGICAL PATIENTS.

Carpentier YA, Druart ML, Delespesse G
Department Surgery, Hopital Saint-Pierre, Rue Haute 322, B-1000 Brussels, Belgium
Acta Chir Belg; 80(2/3):149-155 1981

The effect of total parenteral nutrition (TPN) containing Intralipid on some immune parameters of 21 protein-depleted surgical patients (9 men, 12 women) was evaluated. The disorder treated included neck and digestive tract neoplasms, digestive fistula, inflammatory bowel disease, gastric ulcer, burns over 40% of body area, and massive intestinal resection. The evolution of these immune parameters were studied in relation to nitrogen balance. An attempt was made to determine an eventual specific immune response towards fat emulsion or a direct immunostimulatory or inhibitory property exhibited by exogenous lipids. No adverse reaction was observed in any of these 49 patients during TPN. On wk of TPN resulted in a positive cumulative nitrogen balance in 7/21 patients, a negative balance in 9/21, and no change in 5/21. Before TPN, lymphocyte response to phytohemagglutinin (PHA) was abnormally low in 18/21 patients, while levels of immunoglobulins and isohemagglutinins were normal in all 21. In the seven patients with a positive nitrogen balance following TPN the mean lymphocyte response to PHA increased and became normal in 2/7. Of the five patients with unchanged nitrogen balance, lymphocyte performance was improved in 3/5, decreased in 1/5, and unchanged in 1/5. In the nine patients with a negative nitrogen balance after TPN treatment, the mean lymphocyte response to PHA was not significantly modified. The in vitro or in vivo addition of Intralipid had no effect on lymphocyte response. The results indicated that TPN may improve the prognosis of surgical depleted patient by correcting some previously altered immune parameters as well as nitrogen balance. (20 Refs)

56. IMMUNOLOGICAL STUDY OF GASTRIC CANCER PATIENTS AMONG ATOMIC-BOMB (A-BOMB) SURVIVORS. II. IMMUNOLOGICAL STATUS IN POSTOPERATIVE PATIENTS.

Yamada Y, Tani T, Yanagawa E, Nakano A, Nakanashi K, Toge T, Niimoto M, Hattori T

Dept. Surgery, Res. Inst. Nuclear Medicine and Biology, Hiroshima Univ., Kasumi, Hiroshima 734, Japan

Hiroshima Igaku; 34(1):71-75 1981

The purified protein derivative (PPD) skin reaction, phytohemagglutinin (PHA) skin reaction, Ig and peripheral blood lymphocyte blastogenic (LB) reaction were determined before and 1 mo and 3 mo after surgery on gastric cancer patients who had or had not been exposed to the A-bomb explosion, and changes in these immunological parameters after surgery were determined separately for the patients with stage I + II and III + IV cancer according to the General Rules for the Gastric Cancer Study in Surgery and Pathology. The value of PPD skin reaction for stage I-II unexposed patients before, 1 mo after and 3 mo after surgery was 40.0 +-24.8, 28.9 +-18.1 and 32.8 +-25.1 mm, respectively; that for those exposed was 30.6 +-27.8, 22.6 +-20.7 and 23.4 +-17.4 mm, respectively. The value of PPD skin reaction for stage III-IV unexposed patients was 24.9 +-21.7, 18.9 +-20.7 and 19.4 +-19.2 mm, respectively; that for those exposed was 23.8 +-26.8, 14.4 +-16.8 and 22.0 +-26.8 mm, respectively. The value of PHA skin reaction for stage I-II unexposed patients was 81.7 +-33.6, 54.9 +-31.9 and 35.3 +-23.5 mm, respectively; that for the exposed patients was 74.1 +-32.2, 62.7 +-28.0 and 12.0 mm, respectively. That for stage III-IV unexposed patients was 59.7 +-29.4, 44.6 +-24.4 and 38.4 +-27.5 mm, respectively; that for exposed patients was 58.1 +-29.3, 34.1 +-18.0 and 37.3 +-32.1 mm, respectively. The serum Ig of exposed and unexposed patients was similar and the postoperative values were within the normal range. The value of PHA-LB reaction for stage I-II unexposed patients was 24,039 +-10,483, 14,420 +-7,262 and 25,125 +-10,285 cpm, respectively. That for stage III-IV unexposed patients was 20,962 +-9,276, 18,255 +-10,672 and 16,902 +-7,474 cpm, respectively. The value of pokeweed mitogen LB reaction was similar to that stimulated by PHA skin reaction. All immunological parameters showed similar values for both exposed and unexposed patients, no effect of the exposure on the postoperative recovery of the immunopotential being detected. (10 Refs) (In JPN)

SURGICAL AND RADIATION THERAPY

57. CLINICAL CONSIDERATION OF SURGICAL TREATMENT OF EARLY GASTRIC CANCER.

Ishii T, Miura T, Harada T, Nakayama H, Hirano T, Yoshida C, Nogawa T, Hashimoto S, Fujii R, Takaki T, Hashimoto Y, Ishikawa Y, Kotake Y, Shimoyama T, Uchida Y, Tsuji Y

First Dept. Surgery, Nagasaki Univ., Sch. Medicine, Sakamoto-cho, Nagasaki 852, Japan

Nippon Shokaki Geka Gakkai Zasshi; 14(1):39-44 1981

Early gastric cancers resected between 1968 and 1977 comprised 22% of the 583 primary gastric cancers resected during this period, the percentage being based on the increase in recent yr. Macroscopically, 61.7% were depressed type, 21.9% mixed type and 16.4% protruded type. The site of the tumor was, in decreasing order, in the middle, lower and upper portion of the stomach. There were 73 cancers in the submucosa (sm) and 55 in the mucosa (m). Accompanying lesions such as ulcers and polyps were found in the same stomach as that with the early cancer in 20.3% and multiple malignant tumors which often cause postoperative death in 6.2%. The rate of lymph node metastasis was 14.8% (10.9% for m cancer, 17.8% for sm cancer) of which 7.0%, 6.3% and 1.6% had metastasis to group 1, 2 and 3 lymph nodes, respectively. Gastric resection with removal of group 1 and 2 lymph nodes was recommended even for early cancer since metastasis to these lymph nodes is sometimes seen and since the prognosis of the patients with curative resection is good. The rate of lymph node metastasis tended to increase with the increase in the longer diameter of the cancer lesion of both m and sm cancers. It was slightly higher for macroscopically mixed type than in protruded or depressed type cases. The cases with severe lymphatic invasion did not always show metastasis to the distant lymph nodes, the local lymphatic invasion not directly reflecting lymph node metastasis. (20 Refs) (In JPN)

58. LOCAL RECURRENCE OF GASTRIC ADENOCARCINOMAS AFTER GASTRECTOMY.

Papachristou DN, Fortner JG

Agia Paraskevi, Archilleos 6, Athens, Greece

J Surg Oncol; 18(1):47-53 1981

A study of 257 gastric cancer patients treated with gastrectomy and followed to their death showed that (a) the incidence of local recurrence in the field of gastrectomy was 25%; (b) from the three types of gastrectomy used, extended total gastrectomy resulted in the lowest incidence of recurrence, followed by subtotal and total; (c) recurrences were more common in patients with TNM Stages I, II, and III tumors where extended total gastrectomy was proven superior (p less than 0.05); (d) early stage tumors tended to recur in the gastric remnant and the esophagus; (e) narrow surgical margins and margins involved by disease predisposed to recurrence; (f) not every patient with histologically invaded margins developed recurrence; (g) the risk of recurrence did not decrease with time; (h) the longer the disease-free interval the better the prognosis; (i) the more advanced the original lesion the longer the disease-free interval; (j) of all patients with recurrence only 19% had resectable lesions on reexploration; (k) the longer the disease-free interval the higher the resectability rate; (l) the median interval from recurrence to death was 2 mo; (m) the same interval of those undergoing resection was 18 mo. Patients with early-stage tumors treated with gastrectomy should be followed closely for local recurrence and should recurrence develop they should be reexplored if there is no evidence of metastasis. (Author abstract) (10 Refs)

59. NEW TECHNIQUE OF GASTROJEJUNAL ANASTOMOSIS AFTER PARTIAL GASTRECTOMY.

Shafik A
2 Talaat Harb St., Cairo, Egypt
Am J Surg; 142(3):398-400 1981

The results of a survey of 165 patients who underwent a new technique of gastrojejunal anastomosis after gastrectomy are presented and the technique is described. It consists of jejunal loop division and separate anastomosis of its two limbs to the gastric pouch. Follow-up of 2 to 13 yr revealed encouraging results. There is a lower incidence of postgastrectomy complications compared with the standard Polya anastomosis. The factors responsible for the better results are discussed. (Author abstract) (6 Refs)

60. LATE RESULTS OF POSTOPERATIVE LONG TERM CANCER CHEMOTHERAPY FOR ADVANCED CARCINOMA OF THE STOMACH.

Kano T, Kumashiro R, Tamada R, Kodama Y, Inokuchi K
Second Dept. Surgery, Kyushu Univ. Sch. Medicine, Higashi-ku Fukuoka 812, Japan
Jpn J Surg; 11(4):291-296 1981

The long-term survival of 82 patients who were treated with gastrectomy and postoperative long-term cancer chemotherapy (PLCC) for advanced gastric cancer was compared with that of 75 similar patients who underwent gastrectomy alone. PLCC included mitomycin C (MC: 20 mg intra-operatively; 10 mg every 3 mo thereafter), followed on day 7 postoperatively by FT-207 (600 mg/day, po) and on day 10 by PSK (3 g/day, po); FT-207 and PSK were continued for at least 4 mo after surgery. Control patients received only MC intra-operatively. Survival was consistently longer in the PLCC-treated patients than in the controls. Among patients with Stage III gastric cancer, respective 3-and 5-yr survival rates were 40.0% and 26.7% in controls and 58.3% and 52.8% in the PLCC group (p less than 0.05 for the 5-yr survival rate). The survival rates in controls with Stage IV cancer were 8.9% at 3 yr and 2.2% at 5 yr, whereas those for PLCC-treated patients with Stage IV disease were 26.1% and 19.3%, respectively (p less than 0.05). Mean survival time for 15 controls with peritoneal dissemination was 6.4 mo, whereas that for 14 PLCC patients was 12.8 mo. The mean survival time of six controls with hepatic metastases was 4.3 mo, whereas that for eight PLCC patients was 10.9 mo. It was concluded that PLCC prolongs survival in patients with advanced gastric carcinoma. (19 Refs)

61. A COMPARATIVE STUDY OF PREOPERATIVE COMBINED CHEMOTHERAPY WITH MITOMYCIN C AND 5-FLUOROURACIL (MF THERAPY), AND NEOCARZINOSTATIN AND 5-FLUOROURACIL (NF THERAPY) AGAINST GASTRIC CANCER.

Okada K, Kitade F, Kawashima Y, Yagi A, Yamada S, Sakuramoto K, Okajima K
Dept. Surgery, Osaka Medical Coll., Takatsuki-shi, Osaka Pref. 569, Japan
Nippon Geka Gakkai Zasshi; 82(1):34-41 1981

The present study was designed to evaluate the effects of preoperative chemotherapy with mitomycin C (MMC) and 5-fluorouracil (5-FU) combined with neocarzinostatin and 5-FU on the clinical and histological findings of patients with gastric cancer. In the MF therapy, 4 mg MMC and 500 mg 5-FU were administered to 36 patients (MF group) qod, whereas in the NF therapy, 2 mg neocarzinostatin (2,000 Units) and 500 mg 5-FU, dissolved in 500 ml pentose soln, were given to 25 patients (NF group) qod. No remarkable side effect was observed with either MF or NF therapy or the combined therapy of both. Degenerations of cancer cells were shown in various layers of the gastric wall. The extent of degeneration depended on the number of MMC and 5-FU administrations in the MF group, but not necessarily so in the NF group. When comparing the degenerative effects of drug administration more than 5x between the two groups, the degeneration of cancer cells was more remarkable in the NF group. Examination of cancer cells in the metastasized lymph node revealed that the degeneration in the NF group treated more than 5x was significantly higher than those in the MF group, but in the MF group, the extent of degeneration did not depend on the number of administrations of the drug. Histological examination of various types of cancer cells showed that higher degenerations were observed in papillary adenocarcinomas, poorly differentiated adenocarcinomas and signet ring cell carcinomas in the NF group, however, the degeneration in the MF group was not remarkable irrespective of histological type. (20 Refs) (In JPN)

62. THE EFFECTS OF ADJUVANT CHEMOTHERAPY FOR GASTRIC CANCER WITH CURATIVE GASTRECTOMY STUDIED BY PATHOLOGICAL FINDINGS: FIVE TO THIRTEEN YEARS FOLLOW-UP.

Yasuna O, Ogiwara M, Yamaura Y, Hatayama Y, Nakamura K
First Dept. Surgery, Shinshu Univ. Sch. Medicine, Matsumoto, Japan
Nippon Gan Chiryo Gakkai Shi; 16(2):183-193 1981

Relationships between pathological-clinical factors and the results of chemotherapy were analyzed in 345 patients with gastric cancer on the basis of 5-yr survival rates. Chemotherapy was administered to 225/345 patients who underwent surgery (63 total gastrectomy, 162 partial gastrectomy) and 120/345 who did not have surgery. The 5-yr survival rate of the patients who underwent curative resection and were given chemotherapy (55.2%) was low compared to that for the control group (70.4%), but this difference might have been due to the higher number of patients with early stage cancer in the control group. Compared to the 5-yr survival rate of the control group with Borrmann Type III or IV gastric cancer, that for the patients with Borrmann Type III or IV cancer that was treated with chemotherapy was higher. Patients who had metastasis to second-group lymph nodes (n2) and were treated with chemotherapy had a higher 5-yr survival rate than those who had n2 stage metastasis but did not receive chemotherapy. Survival rates were found to depend on the degree of infiltration of the gastric wall and the histological type of the tumor as well. (17 Refs) (In JPN)

63. ENDOSCOPIC THERAPY OF PREMALIGNANT AND MALIGNANT CHANGES IN THE STOMACH.

Koch H
Stadt, Krankenhaus, Robert-Koch-Str. 1, 8720 Schweinfurt, W. Germany
Endoscopy; 13(4):148-151 1981

Among a total of 34 patients with epithelial gastric polyps, premalignant or malignant polyps were discovered in 10 cases, and removed with the aid of the polypectomy snare. Of six borderline lesions, some of which have been followed up for more than 2 yr, none has developed into a carcinoma. One patient who presented with a malignant hyperplasiogenous polyp - an extremely rare finding - has so far remained free from cancer. In a further case with early carcinoma, Type I, two borderline lesions subsequently developed at different parts of the stomach, finally being followed by a second early carcinoma, Type IIc. One of the adenomas removed revealed a neoplastic transformation, so that immediate surgery was necessary. All in all, the results show that, under certain conditions, endoscopic polypectomy can represent a valuable therapeutic procedure in premalignant and malignant changes in the stomach. (Author abstract) (9 Refs)

64. ENDOSCOPIC UPPER GASTROINTESTINAL POLYPECTOMY. REPORT OF 73 POLYPECTOMIES IN 63 PATIENTS.

Lanza FL, Graham DY, Nelson RS, Godines R, McKechnie JC
Dept. Gastroenterology, Baylor Coll. Medicine, 6630 DeMoss, Houston, TX, 77074
Am J Gastroenterol; 75(5):345-348 1981

Seventy-three upper gastrointestinal endoscopic polypectomies were performed in 63 patients over a period of 5 yr. Thirty-eight patients (52%) had adenomatous polyps, 2 of which contained carcinoma in situ and 26 (36%) were inflammatory in nature. Four lesions were removed from the duodenum. Hemodynamically significant hemorrhage occurred in five cases and persistent symptomatic ulcer in three cases. All complications occurred early in the series and responded to conservative measures. There was no mortality or need for surgical intervention in any case. It was concluded that (1) upper gastrointestinal tract endoscopic polypectomy is a safe and relatively simple procedure, (2) postprocedural complications can be markedly reduced by prophylactic conservative antiulcer therapy, and (3) especially in the area of adenomatous polyps, excision of the entire lesion is superior to biopsy in the detection of early malignancy. (Author abstract) (9 Refs)

65. HEPATIC RESECTION UPON PATIENTS WITH JAUNDICE.

Tsuzuki T, Ogata Y, Hosoda Y, Kasajima M, Nakanishi I, Ishida M
Dept. Surgery, Keio Univ. Sch. Medicine, Tokyo, Japan
Surg Gynecol Obstet; 153(3):387-391 1981

Fourteen jaundiced patients with carcinoma at the bifurcation of the hepatic ducts, primary carcinoma of the liver and congenital cystic dilation of the intrahepatic bile ducts underwent hepatic resection without an operative mortality after the jaundice was relieved preoperatively. All patients did well, with jaundice and fever being absent postoperatively, although nine patients died of a recurrence of carcinoma in the follow-up period. It is now clear that the jaundiced patients become candidates for hepatic resection. (Author abstract) (8 Refs)

66. ANESTHETIC MANAGEMENT FOR ORTHOTOPIC LIVER TRANSPLANTATION: REPORT OF 7 CASES.

Jin S, Bi H, Ma Z, Gao C
Dept. of Anesthesiology, Second Affiliation Hospital, Wuhan Medical Coll., Wuhan, People's Republuc of China
Zhonghua Mazuixue Zazhi; 1(1):2-7 1981

Experience in anesthesia for orthotopic liver transplantation is described for seven cases of advanced hepatoma (all males; aged 29-50 yr). Anesthetics were used in combination and sedative analgesics, including succinyl choline, and lidocaine. There were no complications due to anesthesia. The postoperative survival ranged from 6 to 264 days. (14 Refs) (In CHI)

67. APPLICATION OF A MICROWAVE TISSUE COAGULATOR TO HEPATIC SURGERY: THE HEMOSTATIC EFFECTS ON SPONTANEOUS RUPTURE OF HEPATOMA AND TUMOR NECROSIS.

Tabuse K, Katsumi M
Dept. Gastrointestinal Surgery, Wakayama Medical Coll., 7-Bancho Wakayama, Wakayama, 640, Japan
Nippon Geka Hokan; 50(4):571-579 1981

The treatment of four male patients (40-60 yr old) with microwave coagulation as part of the management of a ruptured hepatoma with coincident liver cirrhosis is described. The apparatus and surgical procedure are described. The microwave generator has a frequency of 2,450 megaHertz and a max output of 150 W. A transitional increase in SGOT and SGPT levels was observed, but the levels returned to normal within 1 wk. No complications resulted in any of the four patients following use of the coagulator. No postoperative hemorrhage was observed in any of the four patients. The postoperative management consisted of glucose insulin therapy, fresh plasma therapy and other procedures to prevent hepatic failure. The hemostatic and tumor-necrotic usefulness of this technic was confirmed on the basis of autopsy findings in two cases and second-look surgery in one case. The results indicated that surgical treatment of liver tumors can be extended due to the availability of the coagulator. (12 Refs)

68. COMBINED USE OF SURGICAL TREATMENT AND POSTOPERATIVE RADIOTHERAPY FOR CARCINOMA OF THE EXTRAHEPATIC BILE DUCTS.

Nakamura K, Andoh H, Komuro K, Nagayama A, Hirasawa M, Kobayashi T, Gotoh M, Kido Y, Eguchi F, Hara Y, Hashiguchi F, Sakamoto R, Shimada A, Yamanouchi T, Gomi M
Dept. Surgery, Jikei Univ. Sch. Medicine, Tokyo, Japan
Nippon Gan Chiryo Gakkai Shi; 16(2):194-203 1981

Results of treatment of 30 patients (22 men, 8 women; 40-79 yr old) with carcinoma of the extrahepatic bile ducts were evaluated by dividing the patients into groups according to whether or not the tumor was resected. The patients had carcinoma affecting the upper (8 cases), middle (6), lower (14), or unclassified (2) portion of the bile duct. Primary and secondary presenting symptoms were most often jaundice, epigastralgia, diarrhea, nausea, chills and fevers, and pruritis. Curative operations that were performed on 19/30 patients included resection of the hepatic duct, resection of the gallbladder, resection of the common duct, hepatico jejunostomy, and papillectomy, and the palliative operative procedures included external drainage, Longmire's operation, internal and external drainage, exploratory laparotomy, and choledochoduodenostomy. Postoperative irradiation that was administered to five patients consisted of 60Co radiotherapy (180 rads/fraction, 5,000-6,000 rads total), and chemotherapy consisted of various combinations of 5-fluorouracil, mitomycin C, endoxan, and/or futraful. Of the patients who underwent curative surgery, 10 died 4-60 mo postoperatively and 9 were alive 2-32 mo after surgery. Of the 11 patients who underwent palliative surgery, 10 died 3-10 mo after surgery, and 1 was alive 17 mo postoperatively. (43 Refs) (In JPN)

69. EXAMINATION OF 40 CANCERS OF THE BILE DUCT (MEETING ABSTRACT).

Matsumoto F, Okamura H, Kondo T, Sato O, Koide M, Ogiya I, Ozawa K, Sugitani M, Nakagawa H, Matsumoto T, Miyagawa T, Maekawa T, Watabe H, Wagai K, Kidokoro T
First Dept. Surgery, Juntendo Univ., Sch. Medicine, Bunkyo-ku, Tokyo 113, Japan
Proceedings of the 9th Annual Meeting of Japanese Association of Biliary Tract Surgery held in Tokyo, 10 April, 1981. Japanese Association of Biliary Tract Surgery, Tokyo 162, Japan, 104 pp., 1981.

Twenty-five cancers of the superior portion of the common bile duct (including cancer of the left and right hepatic duct) (Bs), 4 of the middle portion of the common bile duct (Bm), 8 of the lower portion of the common bile duct (Bi) and 3 diffuse cancers of the common bile duct were seen between 1976 and 1980. Percutaneous transcholedocal drainage (PTCD) was performed on all of the patients, in 31 of whom jaundice could be reduced. Surgery was performed from 5 to 49 days after PTCD, 31.8 days on the av. The total serum bilirubin value before PTCD was performed was 0.6 mg/dl -49 mg/dl, 16 mg/dl on the av, and that just before surgery was 0.3 mg/dl - 8.4 mg/dl, 3.7 mg/dl on the av. Partial resection of the bile duct, pancreaticoduodenectomy, left-hepatoenterostomy, external biliary drainage and exploratory laparotomy were performed in nine, eight, six, two and five patients, respectively. Eight of the 15 cancers in Bs, 1 of the 4 cancers of Bm, 7 of the 8 cancers of Bi and 0 of the 2 diffuse cancers of the common bile duct were resected. Three of the 3 Stage I cancers, 3 of the 4 Stage II cancers, 8 of the 11 Stage III cancers, and 2 of 11 Stage IV cancers were resected. Of the eight patients who had pancreaticoduodenectomy four died within 6 mo, and the other four were still alive after 10 mo, 1 yr and 2 mo, 2 yr and 3 yr. Of the eight patients who had cholangiectomy, five died between 6 mo and 1 yr, and one within 2 yr. However, one was still alive after 4 yr. (no Refs) (In JPN)

70. MEASURES TO IMPROVE THE RESULTS OF THERAPY OF GALLBLADDER CANCER; FROM STUDIES OF 25 CURATIVE RESECTIONS (MEETING ABSTRACT).

Koyama K, Chiba J, Takagi Y, Matsuno M, Sato T
First Dept. Surgery, Tohoku Univ., Sch. Medicine, Sendai-shi, Miyagi Pref. 980, Japan
Nippon Geka Gakkai Zasshi; 82(Suppl):245 1981

Curative resection was performed on 25 of 100 patients who had gallbladder cancer. The cancers had invaded into the mucosa (m) in 4 patients, within the proper muscle (pm) in 5, and beyond the proper muscle (s) in 16. Macroscopically, all of the m and pm cancers were papillary type while nodular and infiltrative type comprised 70% of the s cancers. Histologically,.all of the m and pm cancers and seven of the s cancers were papillary adenocarcinoma. None of the m cancers and only one pm cancer showed vascular invasion, but about 50% of the s cancers showed venal and lymphatic invasion. All of the m cancers showed expansive type growth (alpha), one of the pm cancers infiltrative type growth and three of the pm cancers intermediate type growth. Most of the s cancers showed alpha type growth. The m and pm cancers showed no lymph node metastasis or hepatic invasion, but more than 40% of the s cancers did. An accurate diagnosis could be made in none of the m cancers, in 75% of the pm cancers by drip-infusion cholangiography, ultrasonography or arteriography, and in about 60% of the s cancers, the incorrect diagnoses being gall stones or empyema of the gallbladder. Cystectomy was performed for all of the m cancers, 1 pm cancer and 13 s cancers while extended cystectomy was performed for 3 pm and 13 s cancers. Of all of the patients with pm cancer only the one who had cystectomy died, 2 yr after surgery. One of the patients with s cancer was still alive after 2.5 yr, but the other with s cancer died of relapse before this. (no Refs) (In JPN)

71. TOTAL PANCREATECTOMY FOR DUCTAL ADENOCARCINOMA OF THE PANCREAS. MAYO CLINIC EXPERIENCE.

van Heerden JA, ReMine WH, Weiland WH, McIrath DC, Ilstrup DM

Dept. Surgery, Mayo Clinic, Rochester, MN, 55905

Am J Surg; 142(3):308-311 1981

Follow-up data are presented for 51 patients (30 men and 21 women; av age, 59 yr) with pancreatic ductal adenocarcinoma treated by total pancreatectomy from 1951 thrugh June 1978. The operative mortality was 1/6 (17%) in the 1950s, 2/11 (18%) in the 1960s, and 4/34 (12%) in the 1970s; there was no statistical difference between the decades. Postoperative hemorrhage and sepsis were the chief causes of the mortality. The 3-and 5-yr survival rates were 9.0% and 2.3%, respectively. Most late deaths (86%) wer e due to recurrent disease, usually in the upper abdomen. The median survival was 13 mo. At 1 yr, the only statistically favorable determinants were female sex and tumor multicentricity. In 43 of the late deaths causes included metastasis (37), diabetes mellitus (2) and miscellaneous (4). The main advantage of total pancreatectomy was the elimination of pancreatojejunal anastomosis, which is the most common cause of postoperative morbidity and mortality after the Whipple procedure. However, this advantage did not result in an increase in the long-term survival rate. (8 Refs)

72. CANCER OF THE HEAD OF THE PANCREAS TREATED BY WHIPPLE'S OPERATION. RESULTS IN 24 PATIENTS.

Roder OC

Organkirurgisk afdeling, Kolding sygehus, Kolding, Denmark

Ugeskr Laeger; 143(29):1838-1841 1981

Twenty-four patients (13 men and 11 women, 43-84 yr old) with adenocarcinoma of the head of the pancreas were subjected to Whipple's operation (pancreatoduodenectomy). Nine patients were over 70 yr of age. Seven patients, including six who were more than 70 yr old, died within the first mo after surgery. The causes of death included necrosis of the liver and pancreas, subphrenic abscess, coronary thrombosis, pancreatic fistula with atelectasis, hematemesis, sepsis, and lung edema. Six patients had to be reoperated for ileus, fistula, or bleeding. Diabetes as a consequence of the intervention was not seen, and no patient was treated for pancreatic insufficiency postoperatively. Half of the patients died within 5 mo after discharge form the hospital. The survival was 1.5-54 mo. Fifteen patients died of the underlying disease, one of cerebral hemorrhage, and the last patient died of perforated cholecystitis 54 mo after the first surgery. Since autopsy revealed no recurrence, this patient can be considered to have operated on radically. Compared with the spontaneous course of the disease according to data in the literature, operation does not appear to improve the prognosis of these patients. At present, operation can be recommended only in the case of small tumors without metastases and in patients under 70 yr of age. (15 Refs) (In DAN)

73. PRACTICAL ASPECTS OF RADIOTHERAPY PLANNING WITH COMPUTED TOMOGRAPHY.

Battista JJ, Van Dyk J, Rider WD

Dept. Medical Physics, Cross Cancer Inst., 11560 University Ave., Edmonton, Alberta T6G 1Z2, Canada

Clin Invest Med; 4(1):5-11 1981

The use of x-ray computed tomography (CT) to facilitate radiotherapy planning is reported. Practical considerations are discussed, including examination conditions, the transfer and processing of CT data, and the computation of dose distributions. The case of a patient with carcinoma of the upper esophagus illustrates the usefulness of CT in tissue localization and in dose calculations when allowances are made for tissue inhomogeneity. More realistic dose distributions can be produced in which the dose received by the tumor and the surrounding tissue can be predicted. The assessment of limitations in radiotherapy due to underdosage at the tumor site and complications due to overdosage of normal tissue are discussed. The importance of obtaining dose distributions in planes other than those lying along the central axes of the radiation fields is demonstrated. Systemic irradiation for palliation in cases of disseminated malignant disease and as an adjunct to radical treatment is reviewed. The patient is first treated with large anteroposterior fields of 60Co. The uncorrected dose at the midline is delivered in a single fraction to the lower half of the body, and 6 wk later to the upper half. The interim allows regeneration of the hematopoietic system. CT can be used to obtain patient-specific lung information to adjust the dose prescription. Several limitations of the procedure are discussed. (18 Refs)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

74. CLINICAL OBSERVATION OF 5-FLUOROURACIL (5-FU) CARDIOTOXICITY.

Okuma K, Ota K

Second Dept. Internal Medicine, Aichi Cancer Center Hosp., Chikusa-ku, Nagoya 464, Japan

Gan To Kagaku Ryoho; 8(2):256-261 1981

Clinical records of 385 cancer patients (228 males, 29-93 yr in age; 157 females, 22-84 yr in age) were estimated to investigate 5-fluorouracil (5-FU) cardiotoxicity. There were 181 patients with primary gastric cancer, 62 with primary cancer of the large intestine, 16 with primary cancer of other digestive organs, 52 with primary breast cancer, 38 with primary lung cancer, 10 with primary cancer of the bladder, 15 with primary cancer of the head and neck, and 13 with other primary cancer. In 379 patients with non-cardiac disease, the overall incidence of electrocardiogram (ECG) changes was 1.8% (7 patients), but no patient developed stenocardia or heart failure. On the other hand, ECG changes obtained from the cardiac disease group were not attributable to 5-FU treatment. Since these patients showed anemia or hypopotassemia, these factors may also induce the ECG changes. In this study no patient developed reproducible stenocardia with ischemic ECG changes. This study does not provide any conclusive data in relation to 5-FU cardiotoxicity. Prospective ECG monitoring studies are necessary. (Author abstract) (11 Refs) (In JPN)

75. GASTRIC CANCER: SURVIVAL AFTER ASSOCIATED CYTOSTATIC THERAPY IN 'MINIMUM EFFECTIVE DOSE'.

Rodriguez A, Santamaria J, Medina E, Marre B
Seccion Oncologia., Hospital San Jose, Santiago de Chile, Chile
Rev Med Chil; 109(6):493-497 1981

Gastric cancer is decreasing in Chile as in the rest of the world. In 1979 it was 3.7% of all death in Chile. Death due to cancer is equivalent to 25/100000, which is one of the highest in the world. The 5 yr survival time is only 6.6%, and it is not improving. The 124 patients (97 men, 27 women; 34 were below 50 yr, 70 were 50-69 yr old, 20 above 70 yr old) treated between 1967 and 1979 were selected, because gastric cancer was confirmed histologically (97%) and cytologically (3%). The associated cytostatic therapy in minimum effective dose was given 4 days followed with 3 days rest. The 3 yr survival time was increased from 7.8% to 27.7%, and the 5 yr survival time from 6.6% to 27.7% compared with other studies with the same geographical mixture and age distribution. The therapy is effective, well tolerated and may have favorable action on the cell immunity at the dose level used. The 3 yr survival time of resected patients was much better (52.8%) compared to those that had no surgery (14.5). (26 Refs) (In SPA)

76. ZINOSTATIN AND DOXORUBICIN. A COMBINATION PHASE I STUDY.

Issell BF, Ginsberg SJ, Comis RL
Clinical Cancer Res., Bristol Labs., P.O. Box 657, Syracuse, NY, 13201
Cancer Clin Trials; 4(3):323-326 1981

Because of encouraging single-agent activity for both zinostatin and doxorubicin in hepatocellular cancer, a phase I tolerance study with these drugs in combination was undertaken. The dose of zinostatin given daily for 5 consecutive days and repeated every 6 wk was fixed at 2,250 units/m2. The starting dose of doxorubicin was 45 mg/m2 on days 1 and 22 of every 6-wk cycle, but this was escalated or de-escalated by increments of 33% as tolerated. The occurrence of unpredictable severe and prolonged cumulative myelosuppressive toxicity in most patients resulted in considerable management difficulties. In addition, three patients developed congestive heart failure at cumulative doxorubicin doses ranging from 195 to 270 mg/m2 and two patients developed possible drug-related nephrotoxicity. Until reasons for the pharmacogenetic variability observed with zinostatin are defined, combination studies employing this drug are not recommended. (Author abstract) (10 Refs)

77. ADRIAMYCIN AND METHYL-CCNU COMBINATION THERAPY IN HEPATOCELLULAR CARCINOMA: CLINICAL AND PHARMACOKINETIC ASPECTS.

Chlebowski RT, Chan KK, Tong MJ, Weiner JM, Ryden VM, Bateman JR
Div. Medical Oncology, Harbor-UCLA Medical Center, 1000 West Carson St., Torrance, CA, 90509
Cancer; 48(5):1088-1095 1981

Twenty-one patients with unresectable hepatocellular carcinoma (hepatoma) were treated with Adriamycin (15-45 mg/m2 q 21 days) and semustine (methyl-CCNU: 75-150 mg/m2 q 63 days) with dosage adjusted for hepatic dysfunction. Objective response frequency was 14% with all responses occurring in patients with normal pretreatment bilirubin levels. Median survival of all patients was 87 days. Initial bilirubin levels greater than 2 mg/dl predicted for decreased survival (median 30 days vs 115 days, p less than 0.05). Only moderate hematologic toxicity was observed. Plasma profiles of Adriamycin and adriamycinol were determined during 11 courses of Adriamycin administration in seven of these patients. Despite moderately elevated transaminase levels (all cases) and bilirubin levels (3 cases), plasma Adriamycin profiles in hepatoma patients were not elevated (terminal half-life of 30 hr) and were indistinguishable from that of non-hepatoma patients with normal liver functions. However, delayed appearance of peak levels and prolongation of terminal half-lives were routinely observed for adriamycinol, a major metabolite of Adriamycin. This resulted in a significant increase in the CxT (concentration x time) ratio of adriamycinol/Adriamycin in hepatoma patients compared with non-hepatoma patients (2.36 +-2.12 vs 0.76 +-0.31, p less than 0.05). We conclude that the combination of relatively mild toxicity and normal Adriamycin disposition indicates unusual tolerance to Adriamycin therapy for patients with hepatoma and cirrhosis. As a result, severe dosage adjustments of Adriamycin may not be indicated for all such patients having only moderate hepatic dysfunction. (Author abstract) (32 Refs)

78. CLINICO-PHARMACOLOGICAL EFFECTS OF ANGIOTENSIN II UPON INTRA-ARTERIAL INFUSION CANCER CHEMOTHERAPY.

Miyazaki M, Fujimoto S, Takahashi M, Ishigami H, Minami T, Ohyama N, Okui K
First Dept. Surgery, Chiba Univ. Sch. Medicine, Chiba, Japan
Nippon Gan Chiryo Gakkai Shi; 16(2):204-208 1981

Effects of administering angiotensin II in combination with ia cancer chemotherapy (5-fluorouracil; 5-FU) were studied in six patients who had advanced digestive tract cancer. The angiotensin II and 5-FU (500 mg) were delivered via continuous ia infusion in a 60-min period through an abdominal aortic route in three patients (1 gastric cancer, 2 pancreatic cancer and hepatic metastasis) and selectively through the hepatic artery in three (1 primary hepatic carcinoma, 2 metastatic hepatic cancers). Administration of angiotensin II increased the mean blood pressure 50% and reduced the estimated hepatic blood flow by 15%. Compared to the concentration of 5-FU in the serum of patients who did not receive angiotensin II, concentration of serum 5-FU in those who did receive infusion of angiotensin II was increased approx 40%; concentration of 5-FU in peripheral blood also increased in the patients administered the angiotensin II. Combination of angiotensin II and 5-FU was thought to increase the blood flow to the tumor tissue, and thus favorable clinical response was expected in patients who were given the combination of angiotensin II and 5-FU. (8 Refs) (In JPN)

79. DIMETHYLTRIAZENOIMIDAZOLE CARBOXAMIDE THERAPY OF ISLET CELL CARCINOMA OF THE PANCREAS.

Awrich AE, Peetz M, Fletcher WS
(c/o Fletcher) Div. Surgical Oncology, Univ. Oregon Health Sciences Center, Portland, OR, 97201
J Surg Oncol; 17(4):321-326 1981

Four patients with metastatic glucagonoma and one patient with metastatic diarrheogenic islet cell carcinoma of the pancreas were treated with dimethyltriazenoimidazole carboxamide (DTIC), 250 mg/M2 daily for 5 days repeated every 4 wk. All patients responded clinically and chemically in one or more ways by a reduction in plasma glucagon levels, improved glucose tolerance, decreased measurable tumor, wt gain, and resolution of necrolytic migratory erythema and diarrhea. This experience and other cases from the literature call for the investigation of DTIC as the initial therapy in metastatic islet cell carcinoma of the pancreas and as being of possible benefit in other tumors of neuroendocrine origin. (Author abstract) (18 Refs)

80. SEQUENTIAL COMBINATION CHEMOIMMUNOTHERAPY FOR VARIOUS MALIGNANT TUMORS: CLINICAL AND LABORATORY RESULTS.

Akiyoshi T, Kawaguchi M, Miyazaki S, Koba F, Tsuji H

Dept. Surgery, Res. Inst. Balneotherapeutics, Kyushu Univ., Beppu 874, Japan

Jpn J Surg; 11(4):283-290 1981

A new chemoimmunotherapy program was tested in 139 patients with various advanced malignant tumors. The program consisted of cyclophosphamide (200 mg, iv) on day 1, vibrio cholerae neuraminidase-treated autologous tumor cells admixed with BCG (id) on day 4, and mitomycin C (10-16 mg, iv) plus 5-fluorouracil (500 mg/iv) on day 7 of each course. Maintenance treatment with tegafur (600 mg, po) and immunostimulants was started on day 14. Ninety-nine patients were treated with one course of therapy followed by maintenance treatment for at least 6 mo; the remaining 40 patients received two to six courses at 1-to 6-mo intervals. Among the 65 evaluable patients, 14 (22%) had a favorable clinical response to the new regimen. Among patients with gastric carcinoma, survival was significantly longer in those receiving chemoimmunotherapy than in controls who received no adjuvant therapy. Cell-mediated immune response to autologous tumor extract was detected in 12/42 patients following therapy; immune reactivity measured by the PPD skin test and by phytohemagglutin a lymphocyte blastogenesis was slightly increased after treatment. Prognosis and post-therapy immune reactivity were significantly related, although there was no definite relationship between pretherapy skin reactivity and survival. The results suggest that immunocompetence may be essential to the effectiveness of this combination treatment. (14 Refs)

81. PRELIMINARY PHASE I STUDY OF HUMAN LEUKOCYTE INTERFERON: SIDE EFFECTS OF THE INTERFERON.

Imanishi J, Ito H, Murakami K, Sawada T, Kishida T

Dept. Microbiology, Kyoto Prefectural Univ. Medicine, Kawaramachi-Hirokoji, Kamikyo-ku, Kyoto 602, Japan

Jpn J Clin Oncol; 11(1):9-14 1981

The side effects of systemic administration of human WBC interferon (IF) to 11 patients with cancer and 2 patients with viral infections were examined. After purification, the specific activity of the IF was about 3 to 10 x 10(5) IU/mg of protein. When IF was injected im, the body temperature of all of the patients increased by various amounts over time, reaching a max at between 3-6 hr after injection. Iv IF generally caused a more rapid rise in body temperature than did im IF. With repeated im or iv IF administration, the max temperature was gradually reduced. During long-term administration of IF, an increase in WBC, mainly neutrophils, was observed in six patients, with no evidence of infection. A mild transient anemia was seen in two patients with primary lung cancer. IF produced no marked changes in the bone marrow of the three patients with primary lung cancer so examined. IF did not appear to affect the function of the kidney, liver, or pancreas as indicated by biochemical tests. The results indicated that IF does not produce severe irreversible side effects. (18 Refs)

82. PHA-STIMULATED LYMPHOCYTE INJECTION THERAPY FOR ADVANCED DIGESTIVE CANCER.

Shimizu N, Izumi A, Kanayama H, Osaki Y, Maeta M, Koga S
First Dept. Surgery, Tottori Univ. Sch. Medicine, Tottori, Japan
Nippon Gan Chiryo Gakkai Shi; 16(2):177-182 1981

Eight patients (7 men, 1 woman; 38-70 yr old) with advanced digestive organ cancer (4 gastric cancer, 1 residual gastric cancer, 1 esophageal cancer, 1 transverse colon cancer, and 1 recurrent small intestine cancer) were administered phytohemagglutinin(PHA)-stimulated lymphocytes in combination with mitomycin C, futraful, and 5-fluorouracil or picibanil. Evaluation of the effects of the therapy was based on Karnofsky's evaluation standards, the Japanese Ministry of Health's criteria for evaluating therapy for solid tumors, and Zubrod's performance standard. Lymphocytes were obtained from normal adults, cultured with PHA, and then injected 2x/wk (total 5 x) into the patients. Of the eight patients, only one showed any clinical effect from the injection therapy. Seven of the eight patients died from 1-5 mo after the therapy was initiated, and one patient was alive 10 mo after therapy began. Five of the eight patients had side effects such as fever, chills, nausea, and dyspnea. The evaluation showed that injection of PHA-stimulated lymphocytes was no more clinically effective than the previous method of injecting allogeneic WBC. (19 Refs) (In JPN)

SELECTED CLINICAL CORRELATIONS

83. GRANULAR CELL MYOBLASTOMA OF THE ESOPHAGUS. REPORT OF TWO CASES.

Tune JM, Bowles MH, Grunow WA, Patel GK, Texter EC
Dept. Medicine, Pathology, Univ. Arkansas for Medical Sciences, Little Rock, AR, 72205
Am J Gastroenterol; 75(6):426-430 1981

Granular cell myoblastoma (GCM) of the esophagus is a rare, usually benign tumor, most often discovered incidentally during upper endoscopy, surgery, or autopsy. Although some reports have questioned the safety of endoscopic biopsy of granular cell tumors of the esophagus, we feel that the procedure can be performed safely and accurately. For the unwary, histological examination may lead to a misdiagnosis of squamous cell carcinoma. Although some reports of malignant esophageal tumors can be found, in general, if the histologic appearance of the tumor is benign, malignant transformation or metastasis is unusual. Surgical resection for malignant and for large symptomatic benign tumors is the treatment of choice. In, however, individuals with histologically benign tumors, who are asymptomatic or who are not considered good surgical candidates, careful observation with endoscopic follow-up can be safely done. (Author abstract) (14 Refs)

84. GRANULAR CELL TUMOR OF THE ESOPHAGUS. REPORT OF THREE CASES.

Cohle SD, McKechnie JC, Truong L, Jurco S
Inst. Forensic Sciences, P.O. Box 35728, Dallas, TX, 75235
Am J Gastroenterol; 75(6):431-435 1981

Granular cell tumors, (formerly called myoblastomas) involving the esophagus were encountered in three patients. In all three the tumors were asymptomatic and in two they were multiple. The first published endoscopic photographs of such a tumor are presented. The successful total removal of this neoplasm using the endoscope is described. The pathologic, radiologic and therapeutic aspects of previously reported cases of granular cell tumor of the esophagus are reviewed and compared with the three reported herein. (Author abstract) (24 Refs)

85. HEPATOCELLULAR CARCINOMA IN YOUNG ADULTS.

Albukerk J
Dept. Pathology, Southside Hosp., Montauk Highway, Bay Shore, NY, 11706
NY State J Med; 81(9):1341-1344 1981

Cases of three patients (16, 17, and 19 yr old) with hepatocellular carcinoma are reported. A 19-yr-old man with 3-mo intermittent epigastric pain was observed to have hepatocellular carcinoma at exploratory laparotomy. The patient died after surgery; autopsy revealed small metastases to the lungs. A 17-yr-old man with 9-yr history of drinking 1 pint of whiskey/day presented with abdominal pain, vomiting, and wt loss of several wk duration. The patient died 6 days after exploratory laparotomy had revealed multiple tumor nodules in both lobes of the liver. A 16-yr-old woman with a 9-mo history of an enlarging epigastric mass was observed to have a tumor of the left hepatic lobe. The patient was given chemotherapy following a left hepatectomy, but died 34 mo later. It was thought unusual that three cases of this disease should be seen at this community hospital in a 2-yr period. (19 Refs)

86. TWO CASES OF HEPATECTOMY FOR LEIOMYOSARCOMA METASTASIZED TO THE LIVER.

Mege RM, Yamasaki S, Makuuchi M, Kubota H, Hasegawa H
(c/o Yamasaki) Dept. Surgery, Natl. Cancer Center Hosp., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo 104, Japan
Jpn J Clin Oncol; 11(1):117-125 1981

Two cases of jejunal leiomyosarcoma (LM) metastasized to the liver are presented. Liver metastasis of a LM was diagnosed in a 39-yr-old man 22 mo after jejunal resection for a LM of the jejunum. Selective hepatic angiography showed five cystic tumors at the right lobe and left medial segment. Computerized tomography scan revealed cystic tumors in the same position. Hepatectomy was performed. No recurrence at the primary site of the jejunum was observed. A jejunal lesion and a solitary liver tumor were observed in a 46-yr-old man. Partial resection of the duodenum and jejunum with end-to-end anastomosis was performed. The jejunal tumor was histologically defined as a LM. One mo later a right hepatic bisegmentectomy combined with enucleation of a tiny tumor at the left lateral segment was carried out. Histologically the liver tumor was a LM with the same characteristics as the jejunal tumor. Other cases of metastastic LMs reported in the literature are discussed. (14 Refs)

87. LEIOMYOSARCOMA OF THE DUODENUM. TWO CASE REPORTS AND A LITERATURE REVIEW.

Barkan A, Dintsman M, Wolloch Y, Yeshurun D
Dept. Medicine 'B', Beilinson Medical Center, Sackler Sch. Medicine, Tel Aviv Univ., Petah Tikva, Israel
Am J Proctol Gastroenterol Colon Rectal; 32(8):18-21,28 1981

Two cases of leiomyosarcoma of the duodenum are described. In one patient, there had been repeated episodes of melena during a two-yr period, for which the cause was not determined until operation. This patient was found to have a resectable tumor with no lymph node involvement and was alive and feeling well 8 yr after operation, thus constituting the longest reported survival in this type of tumor. In the second patient, in whom signs of gastrointestinal obstruction appeared 48 hr before admission, the tumor was nonresectable and a palliative procedure was carried out. This patient had shown a good response to combined chemotherapy with vincristine, Actinomycin-D and cyclophosphamide during fourteen mo of follow-up. The wide spectrum of clinical manifestations with this rare tumor should be borne in mind, particularly since a delay in the diagnosis may worsen the prognosis. (Author abstract) (34 Refs)

88. VILLOUS TUMORS OF THE DUODENUM. REPORT OF TWO CASES.

Everett GD, Shirazi SS, Mitros FA
Dept. Internal Medicine, Univ. Iowa Hosp., Iowa City, IA, 52242
Am J Gastroenterol; 75(5):376-379 1981

Two cases of duodenal villous adenoma are reported, bringing the total reported in the world literature to 51. The tumors are of importance despite their rarity because of the frequency of focal or occult malignant changes in the tumors, the nonspecific symptoms and radiographic findings and the potential surgical complications. Therefore, atypical lesions of the duodenum should be investigated endoscopically and all duodenal villous tumors should be surgically resected. Local excision is usually adequate treatment even when microinvasive cancer or carcinoma in situ are present. (Author abstract) (11 Refs)

89. REPEATED VOMITING OF GASTRIC JUICE IN A PATIENT WITH ZOLLINGER-ELLISON SYNDROME. MODIFYING INFLUENCE UPON CLINICAL FEATURES.

Mignon M, Bonnefond A, Gratton J, Bonfils S
INSERM U.10, Hopital Bichat, 75877 Paris, Cedex 18, France
Dig Dis Sci; 26(8):752-755 1981

Gastrin secretory values and serum gastrin concentrations were suggestive of the Zollinger-Ellison syndrome (ZES) in a 47-yr-old woman who presented with repeated vomiting of gastric juice but without diarrhea or a gastroduodenal ulcer. The absence of these two main ZES symptoms was attributed to the vomiting, which removed enough acid as thus acted as nasogastric suction. Cimetidine treatment resulted in the disappearance of the vomiting. The acid hypersecretion in this patient was due to due to two small endocrine tumors in the duodenal wall; both gastrin and somatostatin were identified in the neoplastic cells. Although exploratory surgery revealed no pancreatic lesion, the persistance of a positive secretin test after removal of the duodenal lesions is indicative of abnormal endocrine tissue in the pancreas. (13 Refs)

90. DIARRHEAL SYNDROME AND NON-BETA CELL TUMORS OF THE PANCREAS. VERNER MORRISON SYNDROME: ONE CASE REPORT.

Machado MC, Bettarello A, De Barros Mott C, Bacchella T, Monteiro da Cunha JE
Dep. de Clinica Cirurgica, Faculdade de Medicina da Universidade de Sao Paulo, Sao Paulo, Brazil
Rev Hosp Clin Fac Med Sao Paulo; 36(2):78-85 1981

A 56-yr-old woman was admitted with diarrhea of unknown origin, which appeared 2.5 yr ago with asymptomatic periods of up to a wk duration. Arteriography of celiac trunk indicated hepatic metastases. Computed tomography revealed hepatic metastases and a pancreatic corpus tumor which was invading the peripancreatic fat. At surgery a pancreatic tumor occupying the corpus and tail was resected. Metastases were observed in both liver lobes and in two retroperitoneal ganglions. Cholecystectomy was performed in view of future liver embolization, which was performed postoperatively. First the celiac hepatic artery and a few days later the superior mesenteric artery were embolized. After these procedures diarrhea stopped. Plasma separated from blood removed the night before the operation showed a high concentration of vasoactive intestinal polypeptide (VIP, 42 picomoles/g) and human pancreatic polypeptide (HPP, 1,000 picomoles/g) confirming the Verner Morrison syndrome. Concentrations of Ca and glucose in plasma were normal. Histalog gave normal gastric secretory response. Two mo postoperatively diarrhea reappeared, angiography revealed recanalization, especially of the superior mesenteric artery. New embolization was performed and chemotherapy (streptozotocin, adriamycin, and 5-fluorouracil) was started. After 12 mo the patient is completely asymptomatic. Cases presented in literature, problems concerning diagnosis and therapy are discussed extensively. (44 Refs) (In POR)

91. A CASE WITH GLUCAGONOMA SYNDROME - ENDOCRINE AND METABOLIC STUDIES.

Fukushima H, Yamaguchi K, Uzawa H, Kitoh M, Takemiya M, Konno T
Dept. Internal Medicine, Kumamoto Univ., Inst. Constitutional Medicine, Kumamoto 862, Japan
Endocrinol Jpn; 28(2):111-125 1981

A 57-yr-old woman with skin rash, anemia, wt loss, hypoproteinemia, glucose intolerance, and elevated levels of plasma immunoreactive glucagon (IRG: greater than 2,000 picog/ml) was shown by celiac angiography to have two round 3.7 and 4.8 cm tumor shadows in the liver. Diagnosis was glucagonoma syndrome. Prior to resection of the metastatic liver tumors, detailed laboratory examinations were performed over a period of 5 mo. IRG response to insulin (plasma IRG fell) and to tolbutamide (prompt and significant elevation of plasma IRG occurred in association with elevation of blood sugar) were abnormal. At laparotomy no tumor was found in the pancreas or left hepatic lobe; partial 6 cm resection of the body and tail of the pancreas, right lobectomy of the liver, and splenectomy were performed. Histologically, the metastatic liver tumors were islet cell carcinoma of the pancreas, shown by Grimelius's silver staining to be alpha cells and by the enzyme-labeled antibody method to contain glucagon. The patient died of cerebral hemorrhage 11 days after operation. Autopsy revealed a 1 cm tumor with hemorrhage and necrosis in the head of the pancreas; it was histologically similar to the resected liver tumors. The results reflect an abnormality of glucagon release from the glucagonoma tumor. Hypocalcemia, hypokalemia, cardiac left ventricular hypertrophy, and gastrointestinal dysfunction reported for hyperglucagonemia were also seen in this patient. Present findings are compared extensively with published sources. (46 Refs)

92. GASTRO INTESTINAL LYMPHOMAS: A RETROSPECTIVE ANALYSIS.

Saksena A, Shankur R, Rajvanshi VS
Dept. Pathology, G. S. V. M. Medical Coll., Kanpur, India
Indian J Cancer; 18(2):123-127 1981

Between 1969 and 1979, 48 lymphomas of the gastrointestinal (GI) tract were identified out of 426 cases of lymphomas. Most of the 48 GI lymphomas were of the non-Hodgkin's group (79.17%) with 20.83% in the Hodgkin's disease group. Approx half of the cases were restricted to the second and third decades; only 12.5% presented after 50 yr. All age groups showed a male preponderance. Most patients presented with signs of intestinal obstruction, progressively increasing abdominal lump, and loose motions. Wt loss and anorexia were common. The primary sites were the ileum (35.4%), colon (20.8%) and only one case (2.08%) occurred in the duodenum. Grossly, approx 60% showed a diffuse infiltration of the intestinal wall with flat, greyish-white, plaque-like lesions and concomitant loss of mucosal pattern. The draining mesenteric lymph nodes were enlarged in 75%. Follicular hyperplasia with a sinus reaction of lymph nodes was found in half of the cases, and the specific lesion in the other half. Hodgkin's disease was the mixed cellularity type, while the non-Hodgkin's lymphomas were lymphocytic lymphoma, poorly differentiated type (33.3%) and lymphocytic lymphoma, intermediate differentiation (22.9%). The clinicopathologic findings and their relation to possible etiological factors were discussed. (17 Refs)

93. PALLIATION OF LIVER METASTASES WITH COMBINED HEPATIC IRRADIATION AND MISONIDAZOLE. RESULTS OF A RADIATION THERAPY ONCOLOGY GROUP PHASE I-II STUDY.

Leibel SA, Order SE, Rominger CJ, Asbell SO
Dept. Radiation Oncology, Univ. California San Francisco, San Francisco, CA
Cancer Clin Trials; 4(3):285-293 1981

The management of symptomatic hepatic metastases continues to be a challenge. Although a significant palliative benefit can be achieved with external radiation alone, the total dose of irradiation which can be delivered to the liver is limited by the radiation tolerance of that organ. Recent studies have been directed at ways of rendering the tumor more radiosensitive relative to the normal tissue. A Phase I-II multi-institutional study was undertaken by the Radiation Therapy Oncology Group (RTOG) to study the use of the hypoxic cell sensitizing drug, misonidazole, for treatment of liver metastases. Fifty patients were accessioned to the study, of whom 42 were evaluable. Seventy-six percent of patients had GI primaries. Treatment consisted of radiation therapy to the whole liver delivering 2,100 rads in seven fractions with concomitant misonidazole, 1.5 g/m2 daily. The presence or absence of eight signs and symptoms were recorded prior to therapy and assessed periodically following treatment. The most frequent symptoms at the time of presentation included abdominal pain, weakness/fatigue, and anorexia. Hepatic irradiation was very effective in relieving abdominal pain, with 71% of patients showing improvement at the 4th wk assessment. Abdominal pain was completely relieved in 63% of patients presenting with this symptom. Fever and night sweats were completely relieved in 83% of patients. Constitutional symptoms such as anorexia and weakness/fatigue was improved in only 35% and 33%, respectively. While 19% of patients had a pretreatment Karnofsky status of 90, 45% had a max performance status of 90 at some point following treatment. There was a reduction of hepatic size based on clinical examination and/or scan by the 4th wk assessment in 36 patients. There was no change in 46% and progression in 18%. Reduction in hepatic size was correlated with improved survival. The median survival was 4.2 mo. Patients continued in a mild pain or pain-free status for 80% of their remaining av survival time. The relief or freedom from moderate or severe abdominal pain was maintained despite progression of other symptoms such as anorexia or weakness/fatigue. The major toxicity of this regimen was nausea and vomiting. There were no documented cases of radiation hepatitis or nephritis. A randomized prospective Phase III study is currently in progress comparing radiation therapy plus misonidazole to radiation therapy alone. (Author abstract) (32 Refs)

94. PROGNOSTIC STUDIES ON METASTATIC LIVER CARCINOMAS ORIGINATING FROM THE STOMACH, INCLUDING A THIRTEEN-YEAR-SURVIVAL CASE.

Shiratori T, Nakatani K, Miyagi N, Ezaki T, Konishi Y
First Dept. Surgery, Nara Medical Univ., Nara, Japan
Nara Igaku Zasshi; 32(2):68-76 1981

An evaluation of surgical treatment in influencing survival of cases of stomach carcinoma with liver metastasis is presented. Among 1,388 cases of primary stomach carcinoma, 92 had liver metastases and received one of the following operations: curative, which combined gastrectomy and partial hepatectomy; palliative, which were gastrectomies; and exploratory laparotomies, which were non-gastrectomies for inoperable cases. The degree of liver involvement with the stomach carcinomas was macroscopically divided into three grades as H1, H2, and H3. The survival rate of 7 cases of H1 receiving curative operations was approx 5.2 mo, excluding one long-surviving case which is presented in detail. The rate for 13 cases of H1 receiving palliative operations was 5.3 mo, for 11 H2 cases 3.9 mo, and for 7 H3 cases 4.7 mo. The survival rate of 13 cases of H1 receiving exploratory laparotomies was 3.9 mo, of 20 H2 cases 4.5 mo, and of 21 H3 cases 2.6 mo. Clinicopathological features of the patient surviving for greater than 13 yr after curative surgery are described. No obvious relationship was found between histological type of stomach carcinoma and survival. The results suggested that to increase survival, liver tissue invaded by adjacent gastrointestinal carcinomas, including stomach carcinoma, should be resected. (14 Refs)

REHABILITATION ASPECTS

95. EFFECT OF PARENTERAL NUTRITION ON PROTEIN SYNTHESIS IN ADULT CANCER PATIENTS.

Stein TP, Buzby GP, Rosato EF, Mullen JL
Surgical Res. Lab., Graduate Hosp., Univ. Pennsylvania, Philadelphia, PA, 19146
Am J Clin Nutr; 34(8):1484-1488 1981

The rate of whole body protein synthesis was measured with 15N glycine in three groups of subjects: (1) normal healthy adult controls, (2) semistarved adult patients with upper gastrointestinal tract malignancies and, (3) a group of patients similar to (2) except they were maintained parenterally on a regimen adequate in amino acids and glucose. By comparing the patient results with data obtained from rat studies with 15N glycine we concluded that the patients were protein rather than energy depleted. (Author abstract) (21 Refs)

96. APPLICATION OF TOTAL PARENTERAL NUTRITION (TPN) AGAINST ADVANCED CLINICAL EFFECTS OF CONTINUOUS INTRAVENOUS ADMINISTRATION OF FUTRAFUL IN COMBINATION THERAPY.

Takahashi M, Asai T, Miura Y, Machida T, Kano K, Ikeuchi H, Yoshida K
Dept. Surgery, Miyagi Prefectural Center for Adult Diseases, Natori-shi, Miyagi Pref. 981-12, Japan
Gan To Kagaku Ryoho; 8(2):314-322 1981

Out of 311 TPN cases since 1974, 99 cases of advanced cancer (8 carcinomas of the esophagus, 57 stomach cancers, 7 carcinomas of the large intestine, 11 cancers of the liver and/or bile duct and/or pancreas, and 16 other malignant tumors) were evaluated. Effect of TPN against advanced cancer differed significantly with regard to the prognosis of the patients, depending upon the condition of the disease, and there was a limited effect in cases of hemorrhage and jaundice. On the other hand, the 5-fluorouracil (5-FU) level was high in the blood and tumor tissue after combination of continuous iv infusion of 1,200 mg/body/day of Futraful and the 5-FU level in the tissue:in the blood ratio was about 3.0. Side effects were relatively mild and a clinical response was observed in 11 out of 26 cases (42.3%) of advanced cancer. (Author abstract) (25 Refs) (In JPN)

97. LARYNGOTRACHEAL AUTOGRAFT: AN ALTERNATE FOOD CONDUIT.

Bell RM, Jenkins FM, Griffen WO

Dept. Surgery, Univ. Kentucky Medical Center, 800 Rose St., Lexington, KY, 40536

Am J Surg; 142(3):407-412 1981

A laryngeal autograft was performed using a mucosal flap fashioned from the tracheoesophageal party wall. The procedure was successful in one patient after resection for postcricoid carcinoma of the cervical esophagus. The technique and the advantages in selected cases are discussed. (Author abstract) (19 Refs)

98. EARLY POSTOPERATIVE JEJUNAL FEEDING OF ELEMENTAL DIET IN GASTROINTESTINAL SURGERY.

Ryan JA, Page CP, Babcock L

Mason Clinic, 1100 Ninth Ave., Seattle, WA, 98101

Am Surg; 47(9):393-403 1981

Gastric and colonic ileus after major abdominal operation precludes normal oral nutrition in the immediate postoperative period. Since small bowel motility and absorptive capacity are present immediately after operation, the small bowel may be used for feeding. We prospectively evaluated the efficacy of early postoperative jejunal feeding of elemental diet in three groups of patients. Fourteen adults undergoing elective partial colectomy were randomized to receive jejunal feeding of element al diet (ED) or isotonic iv infusions of dextrose (IV). Considering all avenues of nutrition for the first 10 postoperative days, seven ED patients received a mean daily input of 2,283 cal and 14.1 g of nitrogen compared to 800 cal and 3.4 g of nitrogen for the seven IV controls (p less than 0.005). The ED patients lost 2.4% of their body wt during the first postoperative mo compared to a 6.1% wt loss for the iv controls (p less than 0.005). The ED group required an iv catheter for 1.8 days, compared to 6.6 days for the IV group (p less than 0.005). Twenty consecutive patients subjected to major upper gastrointestinal operations received a daily mean of 1,468 cal and 9.7 g of nitrogen jejunally during the 1st 10 postoperative days. Mean wt loss at 2 and 4 wk, postoperatively was 2.8% and 3.5% of preoperative wt. Ten patients received jejunal elemental diet for longer than 1 mo because of postoperative complications or adjunctive therapy for cancer. Mean wt loss was 2.8%. Early postoperative jejunal feeding of elemental diet supplies more nutrients and results in less wt loss than does iv therapy with isotonic dextrose. Early postoperative feeding is of value in patients undergoing major operations on the upper gastrointestinal tract. (Author abstract) (34 Refs)

99. GASTRIC REPLACEMENT BY ISO-ANISOPERISTALTIC JEJUNAL INTERPOSITION (TUBINGEN SUBSTITUTE STOMACH).

Kieninger G, Koslowski L, Kummer D

Chirurgische Universitatsklinik, Calwer Strasse 7, D-7400 Tubingen, W. Germany

Chirurg; 32(8):505-510 1981

Sixty-two patients (26 men and 36 women, 38-76 yr old, av age 59 yr) were subjected to gastric replacement according to a new method after total gastrectomy since 1972. The indications of total gastrectomy were gastric carcinoma in 53 cases (including gastric stump carcinoma in 4 cases and recurrent gastric carcinoma in 1), non-Hodgkin's lymphoma and gastric polyposis in 3 each, and gastric sarcoma, Menetrier's disease, and giant ulcer in a Billroth-II stomach in 1 case each. The gastrointestinal passage was reconstructed by iso-anisoperistaltic interposition of two jejunal segments (30:10 cm). The reversed segment causes delayed and intermittent emptying in the superjacent isoperistaltic segment. The postoperative mortality was 7/62. Thirty-six patients were still alive at the time of reporting. The longest survival has been so far nearly 8 yr. Digestion and absorption are essentially improved due to the reservoir function of the jejunal interposition, resulting in better quality of life. This method is now used as a routine in all curative gastrectomies, provided there are no contraindications on account of the patient's age or general condition. (20 Refs) (In GER)

100. THE HEPATIC JEJUNOSTOMY AS A PALLIATIVE PROCEDURE IN THE BILIARY OBSTRUCTION DUE TO CANCER OF THE HEAD OF PANCREAS. A REPORT ON 39 CASES.

Estefan A, Pomi J, Baldizan J, Pignata D, Praderi R

Clinica Quirurgica '3'. Hospital Maciel, Fac. de Medicina, Jose H. Figueira 2302, Montevideo, Uruquay

Cir Urug; 51(2):131-137 1981

Due to the inoperable cancer of head of the pancreas, 39 patients had jejunostomy. They were 41-85 yr old, av age 63 yr; 21 men and 18 women. All the patients had jaundice and itching. The 27 cases had regional and 12 disseminated. The latero - lateral hepatic jejunostomy was performed in 25 cases and 14 had latero terminal one. The morbidity was 28% and the mortality 13%. Bad prognosis was indicated in advanced age(above 70 yr), prolongued jaundice, bilirubin above 15 mg/% and neoplastic dissemination. The av survival time was eight mo: 24 lived more than 6 mo, 18 more than 8 mo, 5 more than 10 mo and two are still living 14 and 18 mo later. The hepatic jejunostomy is compared favorably with other therapeutic procedures and the selection of the surgical technique is discussed. (28 Refs) (In SPA)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

101. PREMALIGNANT AND MALIGNANT EPITHELIAL CHANGES IN THE ANTETHORACIC SKIN TUBE AFTER ESOPHAGOPLASTY.

Petri A, Petri I, Nemeth A, Imre J
I. Sebeszeti Klinika, Postafiok 464, H-6701 Szeged, Hungary
Chirurg; 52(8):501-504 1981

Seven patients required reoperation for premalignant and malignant epithelial changes in antethoracic skin tubes inserted for esophagoplasty 14-41 yr (av 30 yr) before for corrosive stricture of the esophagus due to ingestion of lye. Early superficially infiltrating squamous epithelial carcinoma, papillomatous epithelial hyperplasia with incipient malignant transformation, papillomatous epithelial hyperplasia with superficial invasive, partly keratinizing epidermoid carcinoma, pseudoepitheliomatous epithelial hyperplasia and chronic inflammation, papillomatous changes, chronic inflammation without signs of malignancy, and chronic inflammation with fibrosis without signs of malignant transformation were diagnosed histologically. These changes are assumed to have been caused by chronic inflammation due to chemical irritation of the skin tube by stagnant food, saliva, and gastro-neo-esophageal reflux. Based on personal experience and on data in the literature, it is suggested that the use of a skin tube in the repair of the esophagus should be reserved for the small group of patients with esophageal malignancy not amenable to other methods of reconstruction. (15 Refs) (In GER)

102. POSSIBLE ASSOCIATION OF ANGIOSARCOMA WITH ORAL CONTRACEPTIVE AGENTS.

Shi EC, Fischer A, Crouch R, Ham JM
(c/o Ham) Dept. Surgery, Prince Wales Hosp., Randwick, New South Wales 2031, Australia
Med J Aust; 1(9):473-474 1981

Angiosarcoma of the liver has been reported to be associated with the long-term use of androgenic-anabolic and estrogenic steroids. It has been suggested that this tumor might develop in women after long-term exposure to oral contraceptive steroids, although this association has not yet been reported. We present here the clinical and pathological findings in a 42-yr-old woman who died of hepatic angiosarcoma after taking oral contraceptive steroids for 10 yr. (Author abstract) (13 Refs)

103. DOES PEUTZ-JEGHERS SYNDROME PREDISPOSE TO GASTROINTESTINAL MALIGNANCY? A LATER LOOK.

Linos DA, Dozois RR, Dahlin DC, Bartholomew LG
(c/o Dozois) Dept. Surgery, Mayo Clinic, Rochester, MN, 55905
Arch Surg; 116(9):1182-1184 1981

Several reports have recently suggested an association between the development of intestinal carcinoma and the presence of Peutz-Jeghers syndrome. During the 45-yr period between 1935 and 1979, 48 patients with Peutz-Jeghers syndrome were seen at the Mayo Clinic, Rochester, Minnesota, and followed up for a median period of 33 yr. Carcinoma of the small or large intestine did not develop in any patient, with possibly one exception. Survival of patients with Peutz-Jeghers syndrome also was found to be similar to that of the general population. Therefore, skepticism continues about the premalignant potential of this rare syndrome, especially in the small intestine, and surgical conservatism should be practiced in its management. (Author abstract) (18 Refs)

104. FAMILY CHARACTERISTICS OF GASTRIC CARCINOMA.

Ihamaki T, Sipponen P
Div. Gastroenterology, Second Dept. Medicine, Univ. Helsinki, SF-00290 Helsinki 29, Finland
Ann Clin Res; 13(3):149-150 1981

Features of gastric carcinoma were investigated in 301 first-degree relatives of 73 consecutive probands with gastric carcinoma (series) and 358 relatives of 73 control probands computer matched from the general population by age and sex, residence and birth-place. In the series relatives, the prevalence of hyperplastic polyps and atrophic gastritis in the body and antrum, and the prevalence of intestinal metaplasia, epithelial atypia and achlorhydria were significantly higher than in the control relatives. These signs tended to occur at a younger age in the series, but statistical significance was found only for the occurrence of severe atrophic gastritis of the body, intestinal metaplasia, and epithelial atypia. In the relatives of the diffuse carcinoma patients the prevalences of atrophic gastritis of the body and antrum and intestinal metaplasia were significantly higher than in the controls. No such differences were found between the relatives of the intestinal carcinoma patients and their controls. Epithelial atypia and achlorhydria tended to appear at a younger age in the relatives of the diffuse carcinoma patients and the mean age of patients with epithelial dysplasia was significantly lower among the diffuse carcinoma relatives. (3 Refs)

105. GASTRITIS, ITS FATE AND SEQUELAE.

Siurala M
Div. Gastroenterology, Second Dept. Medicine, Univ. Helsinki, SF-00290 Helsinki 29, Finland
Ann Clin Res; 13(3):111-113 1981

A long-term follow-up study was conducted in the 1970's of morphologically verified gastritis in the body mucosa of 116 patients and was compared to the mucosa in 261 controls; both groups were initially seen between 1950 and 1970. Most subjects with originally normal mucosa developed superficial gastritis, while those with superficial gastritis often (50%) displayed atrophic changes at the end of follow-up. These findings indicate a general trend for progression of the gastritic changes with age, and that the progression to atrophic gastritis as a rule passed through the stage of superficial gastritis. Subjects with atrophic gastritis were characterized by a higher prevalence of gastric carcinoma, gastric polyps, intestinal metaplasia, and epithelial dysplasia, compared with controls. While these results do not definitively prove that atrophic gastritis is a precancerous lesion, they show that signs of a severe lesion of the body mucosa characteristic of type A gastritis commonly precede the diagnosis of an intestinal type of gastric carcinoma. (11 Refs)

106. FAMILY BEHAVIOUR OF GASTRIC CARCINOMA.

Lehtola J
Div. Gastroenterology, Univ. Central Hosp., SF-90220 Oulu 22, Finland
Ann Clin Res; 13(3):144-148 1981

The etiology of gastric carcinoma (GCA) was studied with particular attention to the different types in a statistical family study. There were 341 probands with histologically verified GCA diagnosed between 1962 and 1963; GCA was intestinal in 139 cases and diffuse in 67. In 2,243 relatives of the probands, the proportion with GCA was 3.53% if the proband had intestinal GCA, 4.99% if the proband had diffuse GCA, 2.12% if the proband had undifferentiated GCA, and 3.07 if the type of GCA in the proband was unknown. In 2,301 relatives of controls, these figures were, respectively, 2.9%, 1.17%, 3.39%, and 2.37%. The preceding figures were statistically significant only in relatives of probands with diffuse GCA. The relative risk of relatives of probands with diffuse GCA was 7.0 (p less than 0.005). An increased risk was seen only when the proband was female and the highest values were in the cases where the probands were young women. It is probable that genetic factors predispose the body to the influence of environmental factors in the development of GCA. (11 Refs)

107. FAMILY BEHAVIOUR OF CHRONIC GASTRITIS.

Varis K
Second Dept. Medicine, Univ. Helsinki, SF-00290 Helsinki 29, Finland
Ann Clin Res; 13(3):123-129 1981

Chronic gastritis can be divided into three topographically and dynamically different subtypes, discernable at the familial level: type A gastritis mucosal alterations predominate in the body area, type B in the antral area, and type AB in the antrum and body. A major factor, 'Factor A,' is involved in the development of severe atrophic gastritis of the body. This factor is an autosomal dominantly inherited factor. While the etiopathogenic backgrounds of type A gastritis without anemia and that of pernicious anemia are identical, complete penetration of the influence of Factor A is necessary for complete or almost complete lack of intrinsic factor secretion. Parietal cell antibodies may be a phenomenon which parallels atrophic gastritis of the body but has no direct causal relationship with it. The etiological factors of these two phenomena are closely associated, but not identical. While a relation between chronic atrophic gastritis to the intestinal type of gastric carcinoma can be demonstrated only at the individual level, chronic atrophic gastritis is related to the diffuse type of gastric carcinoma at the family level, and not at the individual level. (14 Refs)

108. HEPATOMA IN SIBLINGS WITH PROGRESSIVE FAMILIAL CHOLESTATIC CIRRHOSIS OF CHILDHOOD.

Ugarte N, Gonzalez-Crussi F
(c/o Gonzalez-Crussi) Dept. Pathology, Children's Memorial Hosp., 2300 North Children's Plaza, Chicago, IL, 60614
Am J Clin Pathol; 76(2):172-177 1981

This report describes four siblings affected with familial intrahepatic cholestasis detected in early infancy. In the two male siblings, biliary cirrhosis and fatal hepatocellular carcinoma later developed, whereas the female siblings have had persistent hepatomegaly and recurrent episodes of cholestasis. Sequential biopsies show that this rare disorder of unknown etiology must be added to the many causes of giant cell transformation of the liver in infancy. Its oncogenic risk, particularly in males, has not been generally appreciated. (Author abstract) (29 Refs)

109. CLINICAL FEATURES AND NATURAL MORTALITY OF CHRONIC HEPATITIS IN HONG KONG.

Lam KC, Lai CL, Chan WC
Univ. Dept. Medicine and Pathology, Queen Mary Hosp., Pokfulam Road, Hong Kong, Hong Kong
Aust NZ J Med; 11(4):354-358 1981

To study the clinical picture and survival of chronic active hepatitis (CAH) in Hong Kong, the records of 298 non-alcoholic patients with histologically proven CAH were reviewed. The male:female ratio was 3:1. The mean age (+- SD) on presentation was 47.3 (+-13.1) yr. The liver was shrunken and the mean mass (+- SD) at autopsy was 887 g (+-266) compared to 1,343 g (+-172) in cases without liver disease. The spleen was enlarged to 2 to 20 cm below the left costal margin in 98% of cases. The survival graph showed an annual mortality of approx 13%, without a tendency to flatten out within 10 yr of diagnosis. Survival was best in patients presenting with splenomegaly along, av in those presenting with ascites or gastrointestinal hemorrhage and worst in those presenting with hepatic decompensation. The modes of death were significantly correlated with the chief complaints on first presentation (p less than 0.001). The study documented the clinical aspects of CAH in Hong Kong and amplified the differences reported among CAH patients between Australia and Asia. (Author abstract) (18 Refs)

110. CAUSTIC BURNS AND CARCINOMA OF THE ESOPHAGUS.

Hopkins RA, Postlethwait RW
(c/o Postlethwait), Veterans Admin. Medical Center, Durham, NC, 27705
Ann Surg; 194(2):146-148 1981

A history of caustic injury was obtained in 12 of 846 patients with squamous cell carcinoma of the esophagus. The av age was 52.8 yr; the interval from injury to development of carcinoma was 45.8 yr. Nine of the 12 carcinomas were in the midthoracic segment. Resection was possible in nine patients, with two surviving over 10 yr. A survey of reported series with this association confirms the increased resection rate and probability of long survival compared with the usual carcinoma of the esophagus. (Author abstract) (6 Refs)

111. COFFEE AND PANCREATIC CANCER: THE PROBLEMS OF ETIOLOGIC SCIENCE AND EPIDEMIOLOGIC CASE-CONTROL RESEARCH.

Feinstein AR, Horwitz RI, Spitzer WO, Battista RN
Robert Wood Johnson Clinical Scholar Program, Yale Univ. Sch. Medicine, 333 Cedar St., Box 3333, New Haven, CT, 06510
JAMA; 246(9):957-961 1981

A commentary is made on the recent report that coffee may cause pancreatic cancer. It contains a review of pertinent principles of case-control methodology, together with a critique of the way these principles were applied in the coffee-pancreatic cancer study to formulate a hypothesis, assemble the case and control groups, collect the individual data, and interpret the results. Arrival at the new hypothesis that coffee may cause pancreatic cancer is likened to results of a fishing expedition; the hypothesis is found to contradict previous findings. The study's apparent lack of attention to elimination of bias in selection and retention of subjects is criticized. The possibility of protopathic bias, in which use of the alleged etiologic agent could have been altered by the same ailment that led to the patient's selection for the study, is considered especially serious. In this connection, the limitedness and lack of verification of data are seen as a major problem. Necessity of statistical allowance for a multiple-contrast experimental situation is stressed: stringent demands on the size of the probability value required for significance are recommended. Doubt about the appropriateness of forming conclusions and extensively diffusing results from a study in which the hypothesis develops as an analytic surprise in the data leads to a plea for re-embracement of scientific experimental principles by case-control investigators. (21 Refs)

112. SOURCE OF DRINKING WATER AT HOME AND SITE-SPECIFIC CANCER INCIDENCE IN WASHINGTON COUNTY, MARYLAND.

Wilkins JR, Comstock GW
Dept. Preventive Medicine, Ohio State Univ., 410 West Tenth Ave., Columbus, OH, 43210
Am J Epidemiol; 114(2):178-190 1981

A nonconcurrent prospective study was conducted to investigate the postulated relationship between organic chemical byproducts of water chlorination and risk of human cancer. Vital records and nonofficial census data available for each of nearly 31,000 study subjects were used to compute selected sex- and site-specific cancer incidence rates in a well-defined county population. Age, socioeconomic status, smoking history, source of drinking water at home, and other individual characteristics of the study population were examined in relation to the cancer rates. The drinking water source variable consisted of three historical cohorts, each distinguished by a different degree of exposure to chloroform and other chlorination byproducts. Incidence rates for cancer of the bladder among men and for cancer of the liver among women were nearly twofold higher in the drinking water cohort that had been supplied chlorinated surface water at home when compared to the cohort with a history of consumption of unchlorinated ground water. The differences, however, were not statistically significant. A complementary mortality study also suggested an association of chlorinated water with cancer of the liver and urinary tract. The findings in Washington County indicate the need for further studies of individuals with different histories of exposure to chlorinated and unchlorinated drinking water. (Author abstract) (49 Refs)

113. GEOGRAPHICAL VARIATIONS IN CANCER INCIDENCE IN TWO URBAN POPULATIONS IN INDIA.

Jussawalla DJ, Yeole BB, Natekar MV, Rajagopalan TR
Bombay Cancer Registry, Indian Cancer Society, Parel, Bombay 400 012, India
Indian J Cancer; 18(2):91-98 1981

The variation in cancer incidence between the populations of Greater Bombay and Poona City was investigated by age, sex, and site. Both age adjusted and truncated rates are reported and a simplified statistical method was used for testing the variations. Between 1972 and 1974, there were 12,969 new cancer cases in Bombay and 2,670 new cases in Poona City. The sex distribution showed many more males than females in Bombay (7,428 vs 5,541) than in Poona City (1,346 vs 1,324). In both areas cancer incidence increased sharply with age. In Bombay, more cancers of the tongue, pharynx, esophagus, and lung were seen, while in Poona City, more cancers of the stomach, buccal mucosa, rectum, and penis in males, and stomach, breast, uterus and cervix in females were seen. These differences are attributed to differences in the environmental, geographical and demographic status of these two cities. (10 Refs)

114. ESOPHAGEAL CANCER RESEARCH IN THE PEOPLE'S REPUBLIC OF CHINA.

Wu HH
Dept. Radiation Oncology, Cancer Res. Inst., Chinese Acad. Medical Sciences, Peking, People's Republic of China
Ann Otol Rhinol Laryngol; 90(4,part1):359-363 1981

Esophageal cancer, which accounts for 21% of all cancer deaths in China, has been the subject of epidemiology studies in the three areas of the country where the disease is most prevalent. In the area of the highest mortality rate, the first field research unit was established to study cancer in high-risk areas. The investigations of this unit for the last 20 yr are discussed, including the design and implementation of the studies. The geographic, dietary and cultural factors in the etiology of esophageal cancer are examined. The results of the studies and the clinical applications are explored. (Author abstract) (no Refs)

115. MORTALITY FROM CANCER OF THE DIGESTIVE SYSTEM IN ITALY: 1950-1975 CROSS-SECTIONAL RATES AND COHORT ANALYSIS.

Mastrandrea V, La Rosa F, Cresci A, Pannelli F
(c/o La Rosa) Inst. Hygiene, Camerino Univ., 62032 Camerino, Italy
Am J Epidemiol; 114(2):218-228 1981

In this study of mortality from cancer of the digestive system in Italy, 1950-1975, both cross-sectional rates and cohort analysis were used. The study found that in both sexes age-standardized rates for cancer of the colon, rectum, iver and biliary tract, and pancreas are increasing whereas the rates for cancer of the stomach are decreasing. Rates for esophagus cancer have remained fairly constant. Cohort analysis showed different trends for selected sites. As to cancer of the stomach, for both sexes, cohorts born up until about 1881 have constant or increasing rates; cohorts born after 1881 have declining rates. For cancer of the esophagus in males the rates reach a peak in the 1896 birth-cohort; cohorts born prior to 1896 show an increase in rates and cohorts born later show a decline. For cancer of the colon, liver and biliary tract, and pancreas, the rates rise constantly for all ages and all cohorts in both sexes. The rates for cancer of the rectum rise after age 75 whereas below that age the rates tend to level off and decline. (Author abstract) (40 Refs)

116. EPIDEMIOLOGY OF GASTRIC CANCER IN CHILE.

Armijo R, Detels R, Coulson AH, Medina E, Orellana M, Gonzalez A
Div. of Epidemiology School of Public Health, Univ. of California, Los Angeles, CA, 90024
Rev Med Chil; 109(6):551-556 1981

Japan has the highest gastric cancer mortality (GCM), followed closely by Chile and Costa Rica. The GCM in Chile was studied in 1957-1975 period. The extreme south and north had the lowest values for GCM were 20/100,000, which increases as approaching the center. The highest values for GCM were 50/100,000, found in 3 agricultural provinces 200 kilometers south of Santiago. The GCM decreased slightly worldwide between 1957 and 1972, this is true for Chile, except for the high risk areas. Chile has vast reserves of natural nitrates and they are used widely as fertilizers. Gastric cancer patients in controlled, matched studies were shown to have been residents longer in the areas of high nitrates utilization. Nitrates and nitrites were measured in saliva and urine of urban children, and edible vegetables of different areas, but no significant differences could be found. All factors, which could influence the results are analyzed and discussed. (10 Refs) (In SPA)

117. THE MALIGNANT DIGESTIVE TRACT TUMORS IN THE POPULATION OF URUGUAY.

Carro Tunessi M, Fernandez Giuliani J, Gianelli Ferrero S, Ketzoian Aparikian C, Rovigo Guanco A, Vidal Gaggiano L, Werner Covalesky A
Catedra de Higiene Medicina Preventiva, Facultad de Medicina de Uruguay, Montevideo, Uruguay
An Fac Med Univ Montev; 4(1):21-26 1981

This survey was based on the examination of the death certificates. There were no previous surveys of the Uruguay population mortality due to the malignant digestive tract tumors, their location and sex. The digestive tract was divided according to the Committee of Experts of the World Health Organization to: esophagus, stomach, intestines and rectum. This survey was taken in 1963 and in 1975. The data obtained in 1975 were compared with the international data. There was no difference in the total mortality or the distribution by sex between the two yr, but there were differences in location: the mortality of the stomach cancer decreased and the mortality of the intestinal cancer increased. When comparing international and Uruguay data, there was an inversion in the stomach and rectum cancers. In Uruguay the stomach cancer was third and the rectum cancer was fourth, the opposite was true in the international survey. (3 Refs) (In SPA)

118. MORBIDITY FROM CANCER IN LA PAZ, BOLIVIA.

Rios-Dalenz J, Correa P, Haenszel W
Casilla 490, La Paz, Bolivia
Int J Cancer; 28(3):307-314 1981

Data from a population-based Cancer Registry in La Paz, Bolivia, are presented. The city is located at approx 4,000 meters above sea level and has a strong cultural influence consisting of Aymara Indians immigrating from the altiplano. Incidence rates in females are high for cancer of the cervix, the gallbladder and the thyroid gland. Males display unusually high rates of testicular cancer. Stomach cancer rates are lower than among other Andean populations. Smoking-related cancer and cancers related to sex-hormones are lower than av in incidence. Cancer of the nasal mucosa and paranasal sinuses is unusually high in frequency. (Author abstract) (20 Refs)

119. INCREASING FREQUENCY OF PRIMARY LIVER CARCINOMA IN THE CANTON OF ZURICH.

Maurer R, Schuler G, Bosch R, Ruttner J
Institut fur Pathologie, Universitatspital, 8091 Zurich, Switzerland
Praxis; 70(27):1222-1227 1981

The occurrence of liver cirrhosis (LC) and primary liver carcinoma (PLC) was studied in 39,336 consecutive autopsies performed in the Canton of Zurich during the period 1967-1978. The autopsies represented 34% of all deaths during the observation period. PLC was found in 405 cases (313 men and 92 women), LC in 2,368 cases (1,605 men and 763 women). PLC was associated with LC in 299 cases (252 men and 47 women). The proportion of PLC increased during the observation period from 0.68% in 1967 to 1.51% in 1978, while the proportion of LC remained fairly constant at approx 6%. There was an increase in the proportion of PLC both with and without LC. The age and sex distribution of PLC shows a predilection for men aged 50-79 yr. There was a 50% increase in the occurrence of PLC among men in their 60s and 70s, while cirrhosis remained constant in men in their 60s and 70s, while cirrhosis remained constant in men of this age group. It is concluded that there has been a real increase in the incidence of PLC, which can not be explained by the higher proportion of old people in the population, nor by an increased frequency of LC. This assumption is also supported by increased frequency of LC. This assumption is also supported by increased mortality due to PLC in the Swiss federal mortality statistics. Aflatoxins are unlikely to have been a significant etiological factor. (22 Refs) (In GER)

120. CANCER INCIDENCE IN AN AREA CONTAMINATED WITH RADIONUCLIDES NEAR A NUCLEAR INSTALLATION.

Johnson CJ
42 Hillside Drive, Denver, CO
Ambio; 10(4):176-182 1981

Cancer incidence for 1969-1971 was evaluated in census tracts with and without contamination by plutonium and other radionuclides downwind from the Rocky Flats (nuclear weapons) plant near Denver, Colorado. This area has been exposed to Pu and other radionuclides in the exhaust plumes from the plant since 1953. With reference to unexposed areas 35 km or more from the plant, there was an incidence of cancer in males 24% higher in the area I nearest the plant (3-21 km) and 15% higher in area II, which is 21-29 km from the plant. The corresponding values for females were 10% in area I and 5% in area II. More cases than expected were observed in cancer of the lung, leukemia, lymphoma and myeloma (males only), and tongue, pharynx and esophagus, colon and rectum, liver, pancreas (males only), and only in females for cancer of the gonads, thyroid, and brain. Exposed area II had a correspondingly smaller excess incidence of all cancers, and area III, even further from the plant, had an incidence of all cancer only slightly greater than expected. The classes of cancer found to be in excess were mostly those developing in radiosensitive tissues. Particular attention is given to the remarkably higher incidence of cancer of the testis in the three exposed areas. (58 Refs)

121. EPIDEMIOLOGY OF ASBESTOS-RELATED TUMORS.

Newhouse M
London Sch. Tropical Medicine and Hygiene, Keppel St. (Gower St.), London WC1 E7HT, England
Semin Oncol; 8(3):250-257 1981

Tumors shown to be related to the exposure of various asbestos dusts include mesothelioma of the pleura and peritoneum, a rare tumor in the general population but an important cause of death in particular asbestos workers; bronchogenic carcinoma; and possibly gastrointestinal tumors and cancer of the larynx. A case control study of patients dying of mesothelioma at The London Hospital since 1916 revealed that in addition to occupational exposure, domestic contact with dust was also important in the pathogenesis of mesothelioma. It was shown that increasing severity of exposure and increasing length of exposure were associated with an increased death rate from mesothelioma. Factors influencing the incidence of mesothelioma are the concentration of dust to which the workers were exposed, the length of time exposed, and the predominant type of asbestos fibers used. A synergistic effect of cigarette smoking and asbestos exposure on lung cancer has particularly important implications for asbestos workers. A strong anticancer antismoking campaign and careful screening of asbestos workers for lung cancer and mesothelioma are advocated. Other asbestos-related tumors, gastrointestinal cancers and cancer of the larynx warrant further investigation to define the relative risk and to determine what, if any, other cocarcinogenic factors may be involved. (37 Refs)

122. ASBESTOSIS AND PUBLIC HEALTH.

Liddell FD
Dept. Epidemiology and Health, McGill Univ., 3775 University St., Montreal, PQ H3A 2B4, Canada
Can Med Assoc J; 125(3):237-239 1981

Asbestos (AB) and AB-related disease are discussed. The most hazardous AB seem to be crocidolite and the least, chrysotile. Exposure-response relationships, which for lung cancer appear to be linear, are considered. The fiber gradient, which is steeper for mesothelioma than other responses, is discussed. The association between AB and gastrointestinal and laryngeal cancer is considered. Diagnosis of asbestosis is far from standard since no clinical signs are specific and some history of AB exposure is required. It has been shown that among AB workers, cigarette smoking increases the risks of lung and laryngeal cancer but not mesothelioma or gastrointestinal cancer and perhaps not asbestosis. in all AB-related diseases there is a long interval between the first exposure and the onset of symptoms. Safety limits for occupational AB exposure are discussed. Non-occupational AB exposure is considered. The possible of use of AB substitutes and implications of their use are discussed. No asbestos control limit can guarantee absolute safety. (27 Refs)

123. MORTALITY OF UNITED KINGDOM ACRYLONITRILE POLYMERISATION WORKERS.

Werner JB, Carter JT
Health and Safety Executive, London W2 4TF, England
Br J Ind Med; 38(3):247-253 1981

The mortality of 1,111 men who worked on the polymerization of acrylonitrile and the spinning of acrylic fiber from 1950 to 1968 was surveyed up to the end of 1978. Seventy-nine deaths were identified. The population was drawn from six factories, where polymerization started before 1968, in England, Wales, Scotland, and Northern Ireland. In the group of men exposed to acrylonitrile for at least 1 yr the total number of deaths was smaller than expected. An excess of deaths from all cancers was found, arising mainly from cancers of the lung, stomach, colon, and brain, but the excess was not statistically significant. Significant excesses of stomach cancer overall and in those aged 55-64, and of lung cancer in those aged 15-44 were found. Consideration of deaths according to factory indicated that the excesses of stomach cancer may have been due to regional factors. The excess of lung cancer was investigated further in view of the fact that, unusually, it occurred in relatively young men, but no consistent difference between the duration of exposure to acrylonitrile of the three young patients with lung cancer and matched controls was found. The study is limited and further analysis in the future is needed. The results are not conclusive and neither add to nor detract from existing suspicions that acrylonitrile is a human carcinogen but, taken together with evidence from other studies, indicate the necessity for the continuing surveillance of the exposed population in the United Kingdom. (Author abstract) (9 Refs)

124. AN EPIDEMIOLOGICAL SURVEY OF EIGHT OIL REFINERIES IN BRITAIN.

Rushton L, Alderson MR
Div. Epidemiology, Inst. Cancer Res., Sutton, Surrey SM2 5PX, England
Br J Ind Med; 38(3):225-234 1981

A mortality study of workers employed for at least 1 yr between 1 January 1950 and 31 December 1975 at eight oil refineries in Britain has been carried out. Over 99% of the population were successfully traced to determine their vital status at 31 December 1975. The mortality observed in the study population was compared with that which would be expected from the mortality rates for the all male population of England and Wales, and Scotland, with adjustment for regional variation in mortality for the English and Welsh refineries. The overall mortality observed was considerably lower than that expected on this basis, as was the mortality from heart disease, stroke, bronchitis, and pneumonia. The observed number of deaths from all neoplasms was also very much less than expected, a result almost entirely due to a large deficit of observed deaths from lung cancer. Raised mortality patterns were found in several refineries for cancers of the esophagus, stomach, intestines, and rectum, although no location was consistently high for all these causes of death. Different yr-of-entry cohorts and job groups were also affected. In general, mortality from these causes increased as length of service and interval from starting work increased. There were also significantly more observed deaths than expected from cancer of the nasal cavities and sinus, and melanoma. Further work is required to ascertain whether these are due to an occupational factor and, if so, to identify the physical or chemical nature of the risk. (Author abstract) (32 Refs)

125. EPIDEMIOLOGICAL ASPECTS OF ESOPHAGEAL CANCER.

Ruggieri M, Tosato F, De Rocco K, Lepore M, Cipriano E, Paolini A
IV Cattedra di Clinica Chirurgica Generale e Terapia Chirurgica, Universita degli Studi di Roma, Rome, Italy
Recenti Prog Med; 70(5):545-556 1981

The epidemiology of esophageal cancer (EC) is reviewed and epidemiological data are presented for a series of patients subjected to surgery for EC at a clinic during the period 1971-1980. The factors probably favorable for the development of EC are ethyl alcohol, tobacco, polycyclic aromatic hydrocarbons (benzopyrene, dibenzanthracene, and 3-methylcholanthrene) present in smoked foods, nitrosamines, molybdenum, tannin, hot food, diet deficient especially in thiamine, riboflavine, and vitamin C, esophageal stenosis, peptic reflux esophagitis, brachyesophagus, achalasia of the cardia, gastric resection, and Plummer-Vinson syndrome. The epidemiological analysis of the patients treated during the 1971-1980 period showed that all patients were in the age bracket 42-75 with a mean of 59.3 yr, and that women accounted for 5.2% of the patients only. Alcohol consumption (1 liter/day) was established in 18.5% of the patients, alcohol consumption and smoking (10 or more cigarettes/day) in 52.5%, smoking only in 18.5%, and neither smoking nor alcohol consumption in 10.5%. The cervical third of the esophagus was affected in 10.5% of all cases, the thoracic third in 34%, and the abdominal third in 55.5%. (28 Refs) (In ITA)

126. EPIDEMIOLOGY OF GASTROINTESTINAL CANCER.

Miller AB
NCIC Epidemiology Unit, Univ. Toronto, McMurrich Building, Toronto, Ontario M5S 1A8, Canada
Compr Ther; 7(8):53-58 1981

An epidemiological study is presented which attempts to quantify the problems and obtain clues as to the cause of gastrointestinal (GI) cancers in North America and elsewhere. Cumulative incidence to age 75 for various cancers of the GI tract as determined by the Third National Cancer Survey is presented. The range of incidence throughout the world of esophageal and liver cancer is greatest, followed by gallbladder, colon, stomach, rectal, and pancreatic cancer. The sex ratios are similar in incidence for colon cancer, moderately excessive for males with stomach, rectum, and pancreatic cancers, and substantially excessive for males with esophageal and liver cancers. An excess in females occurs with gallbladder cancer. Similarities in the frequency of occurrence for different diseases suggest common causes: the causes of esophageal cancer in men and women are probably different, while those for colon, rectal, and pancreatic cancers in both sexes may be similar, as are those for liver and esophageal cancer in men and for breast, endometrial, and ovarian cancer in women. The inverse correlation of colon cancer with stomach cancer suggests that entirely different causes may be involved. The epidemiologic knowledge of esophageal, stomach, colon and rectal, gallbladder, liver, and pancreatic cancers is reviewed. It appears that protective factors for one cancer are different from factors that appear to be carcinogenic for others. Future studies will identify interactions among factors and will specify which are responsible in different areas. (15 Refs)

SELECTED PRE-CLINICAL STUDIES

127. CONSISTENT MOLECULAR GENETIC VARIATION IN HUMAN GASTROINTESTINAL CARCINOMAS.

Humphries P
Dept. Medical Genetics, Medical Biology Centre, Queen's Univ. Belfast, 97 Lisburn Road, Belfast BT9 7BL, Northern Ireland
Nature; 293(5828):146-148 1981

DNA sequences in five human gastrointestinal carcinomas were analyzed by autoradiographic scanning after hybridization to recombinant DNA. The DNA was digested with EcoRI restriction endonuclease, separated by electrophoresis in agarose gel, then blot-transferred and hybridized to P32-labeled DNA probes derived from the 14-or 50-kilobase (kb) regions. Hybridization signals produced by two moderately differentiated sigmoid tumors, a moderately differentiated rectal tumor, an invasive stomach tumor, and a colon tumor are described. Results demonstrated that a consistent genetic variation underlies that apparently random degeneration detected at the chromosome level in advanced human carcinomas. The tendency for hybridization signals to disappear may reflect loss of DNA sequences or their relocation to different sites in the genome. (18 Refs)

128. EXPERIMENTAL CANINE GASTRIC CANCER AS A MODEL FOR HUMAN GASTRIC CANCER. COMPARISON OF HUMAN AND EXPERIMENTAL CANINE GASTRIC CANCERS.

Nakamura Y
Dept. Basic Medical Pathology, Tsukuba Univ., 1-1-1 Tendamadai, Sakura-mura, Niihara-gun, Ibaraki Prefecture 305, Japan
I To Cho; 16(7):723-726 1981

The question of whether or not experimental canine gastric cancers can be used as models for human gastric cancers was explored by examining and comparing the findings of research on both types of cancer. Biological and chemical similarities of human gastric cancer and canine gastric cancer such as the fact that both hosts are mammalian and have a great many metabolic pathways in common were considered to indicate that the existing cancer would have a similar host environment in either animal. On the other hand, intestinal metaplasia has been observed in human stomachs while it has not been observed in dogs, thus canine gastric cancer cannot be used as a model for human gastric cancer unless the cancer is a solid mucosal carcinoma. On the macroscopic level, the incidence of gastric cancers spontaneously occurring in the area of the pyloric gland, antrum, and even the lesser angle of the stomach was lower among the chemically induced canine cancers than the human cancers. Differences in the incidences of multiple gastric cancers also existed between the cases of human gastric cancer and induced, experimental canine cancers. Although many similarities exist between human and canine cancers, the histological difference between the two with respect to carcinogenesis of the mucosa is a major reason why the canine gastric cancer cannot be used as a model of the overall structure of human gastric cancer. (17 Refs) (In JPN)

129. CONTRIBUTION OF THE STUDY OF EXPERIMENTAL CANINE GASTRIC CARCINOMA TO THE STUDY OF HUMAN GASTRIC CARCINOMA.

Kurihara M, Izumi T, Shirakabe H, Okui K, Miyazaka K, Maruyama S, Sasaki Y, Inaguma H, Kamano Y, Yasui A, Suwa B
Third Dept. Internal Medicine, Saitama Medical Sch., Saitama 350-04, Japan
I To Cho; 16(7):737-744 1981

Induction of experimental gastric carcinoma in dogs by N-ethyl-N'-nitro-N-nitrosoguanidine (ENNG) soln was investigated, and the dynamics of 5-fluorouracil (5FU) and uracil + 5-fluoro-1-(tetrahydro-2-furyl)-uracil (UFT) were studied in dogs bearing cancers. Gastric carcinomas were induced easily in the dogs by administering ENNG po 2x/day (13.8-23.8 g total) with food pellets, but scirrhous type gastric carcinoma was rarely induced with ENNG alone. On the other hand, 3/10 beagles given ENNG and gastrin developed scirrhous type carcinoma; all three tumors were observed in the pyloric and antrum regions of the stomach and were poorly differentiated adenocarcinomas. Signet ring cell carcinoma in the submucosa and marked proliferation of collagen fibers in the antrum were also observed. After iv injection and po administration of 14C-5FU to the ENNG-induced tumor-bearing dogs, higher concentrations of 5FU were observed in the cancer tissues (both superficial and deep) than in the normal tissues. Similar tests of UFT in a dog with ENNG-induced gastric carcinoma showed that 5FU concentrations were higher in the stomach and lungs than other tissues. (25 Refs) (In JPN)

130. CANINE GASTRIC CARCINOMA AS AN ANIMAL MODEL OF HUMAN GASTRIC CARCINOMA.

Matsukura N, Morino K, Ohgaki H, Kawachi T
Div. Biochemistry, Natl. Cancer Center Res. Inst., Tokyo 104, Japan
I To Cho; 16(7):715-722 1981

Conditions needed to induce gastric cancer in dogs which resembles that found in humans were investigated, and the advantages of canine experimental gastric cancers as models were discussed with respect to human gastric cancer. Gastric carcinoma was induced in 15/15 male beagles that were given N-ethyl-N'-nitro-N-nitrosoguanidine (ENNG; 100 or 150 ug/ml drinking water) for 5-9 mo. The eight dogs given 100 ug/ml of the ENNG primarily developed depressed-type early gastric carcinoma and Borrmann Type 2 or 3 advanced gastric carcinomas of the gastric angle and antrum. The seven dogs given 150 ug/ml of the ENNG primarily developed protruded or depressed-type early gastric carcinoma, Borrmann Type 1-like carcinomas and Type 3 advanced gastric carcinomas of the gastric angle, antrum, and a few on the corpus. Labeling indices (LIs) of canine gastric carcinoma were examined in vivo with pulse injection of methyl-3H thymidine iv. The LIs of cancerous lesions were lower than those of noncancerous gastric mucosa or that of untreated dogs. The LIs differed according to histological types of tumors and to the area of the particular lesion. Canine gastric cancers were thought to be valuable models for basic research on carcinogenesis and chemotherapeutic regimens. (10 Refs) (In JPN)

131. EXPERIMENTAL CANINE GASTRIC CARCINOMA AS A MODEL TO STUDY EFFECTS OF ANTICANCER DRUGS.

Tanaka Y, Uosumi G, Inokuchi H, Aoike A, Kawai K
Dept. Preventive Medicine, Kyoto Prefectural Univ. Medicine, Kyoto 602, Japan
I To Cho; 16(7):745-750 1981

Experimental gastric carcinomas were induced in eight beagle dogs by means of N-ethyl-N'-nitro-N-nitrosoguanidine (ENNG), and the effects of a schizophyllum polyglucan (SPG) on the cancers were studied. Ten dogs were divided into four groups: Groups I (3 dogs), II (3), and III (2) were administered the ENNG, and Group IV (2) was not; Groups I and II were given SPG (2 mg/kg/wk) + Freund's incomplete adjuvant (FIA), while Group III was given NaCl + FIA and Group IV was given NaCl alone. The SPG was administered sc in all groups. Group I dogs were given the SPG 12 mo after administration of the ENNG and after cancerous lesions were observed. Group II dogs were given the SPG 5 mo after administration of the ENNG and while no cancerous lesions were observed. Changes in mitogen responses of peripheral lymphocytes from the dogs to concanavalin A and phytohemagglutinin were not observed in the dogs administered SPG, but the dogs not administered the SPG showed decreased mitogen response. However, as endoscopic examination of the cancers in the dogs given the SPG showed advancing growth of the tumors, therapeutic effect was doubted. The canine gastric cancer model was thought to be applicable for immunotherapy studies of human gastric cancers. (12 Refs) (In JPN)

132. MORPHOGENESIS OF EXPERIMENTAL CANINE GASTRIC CARCINOMA, PARTICULARLY THE DEVELOPMENT OF THE 'DOUBLE-LAYER STRUCTURE' OF SIGNET RING CELL CARCINOMA.

Sunagawa M, Murakami T, Takeshita K, Nakajima A, Hoshi K, Menjo M
First Dept. Surgery, Tokyo Medical and Dental Univ. Sch. Medicine, Tokyo, Japan
I To Cho; 16(7):751-756 1981

An N-ethyl-N'-nitro-N-nitrosoguanidine (ENNG)-induced gastric carcinoma that was produced in a female beagle was examined with 5 mm-width serial sectioning and staining. The cancer nest, 3-5 mm in diameter, was observed 11 mo after the initial 6-mo ENNG treatment period (11.7 g ENNG total). Borrmann 3 type cancer (poorly differentiated adenocarcinoma), Type I early stage cancer (well-differentiated tubular adenocarcinoma), and Type IIc early stage cancer (signet-ring cell carcinoma and poorly differentiated adenocarcinoma) were observed in the resected stomach as well as numerous microcarcinomas (signet-ring cell carcinomas and highly-differentiated tubular adenocarcinomas) in the mucosa. Examination of 5 um thick sections with various stains showed double-layer structures indicating that signet-ring cells infiltrated the mucosa propria in the area where the basement membrane was disrupted. Results indicated that signet-ring cell carcinoma might have developed from a double-layer structure in the gastric gland itself. These findings were confirmed by examination of the stomach from a dog given ENNG for only 3 mo; the stomach showed multiple minute foci consisting only of signet-ring cells with a double-layer structure. (9 Refs) (In JPN)

133. PRODUCTION OF BORRMANN TYPE 3 GASTRIC CANCER IN DOGS TREATED WITH LOW CONCENTRATIONS OF ENNG.

Fujita M, Nampei S, Tsukahara Y, Taguchi T, Sato M
Dept. Surgery, Res. Inst. for Microbial Diseases, Osaka Univ., Osaka, Japan
I To Cho; 16(7):761-767 1981

Endoscopic, radiographic, and histologic examinations of gastric cancers induced in 8/15 dogs by means of low concentrations of N-ethyl-N'-nitro-N-nitrosoguanidine (ENNG; 50 ug/ml/day; 3.4-9.2 g total) administered for 30-52 wk were performed. Of the eight dogs that had gastric carcinoma, seven died of advanced gastric cancer up to 5 yr after initiation of the experiment. The primary tumor nests were Stage I in one case, II in one, III in one, and IV in four. Six of the dogs developed Borrmann Type 3 cancer from poorly-differentiated adenocarcinoma; serial examination of these tumors indicated that the primary tumor nests developed from Type IIc early stage carcinoma. Examination of the Borrmann Type 3 lesions showed limited cancerous spread in the mucosal layer, signet-ring cell cancer limited to small areas around the ulcer, diffuse infiltration of the submucosal layer, and invasion of poorly-differentiated adenocarcinoma to the serosa. Results indicated that this animal model can be used to study human gastric carcinoma. (16 Refs) (In JPN)

134. TRANSPLANTATION OF UNTREATED GLANDULAR STOMACH OF FETAL AND NEWBORN RATS AND THE IR MALIGNANT CONVERSION.

Kurokawa Y, Takahashi M, Furihata C, Ohno Y, Takamura N
Div. Pathology, Natl. Inst. Hygienic Science, Kamiyoga 1-18-1, Setagaya-ku, Tokyo 158, Japan
Gan; 72(4):620-626 1981

Untreated fetal and newborn glandular stomachs of Wistar rats were transplanted into the subcutis, testis, peritoneal cavity and subcapsular spaces of the kidney or spleen of syngeneic adult rats. The recipients were sacrificed 1 yr after transplantation. Transplantability was very high and the grafted tissues were recovered from more than 80% of the animals at almost all transplantation sites. The transplanted gastric mucosa was well-differentiated morphologically and biochemically. Malignant conversion occurred in 6 of 118 transplants (5%); the tumors were a fibrosarcoma (1), a ganglioneuroblastoma (1), leiomyosarcomas (2) and squamous cell carcinomas (2). No malignant transformation of glandular stomach epithelium was observed. (Author abstract) (12 Refs)

135. NONDETECTION OF INFECTIOUS HEPATITIS B VIRUS IN A HUMAN HEPATOMA CELL LINE PRODUCING HEPATITIS B SURFACE ANTIGEN.

Tabor E, Copeland JA, Mann GF, Howard CR, Skelly J, Snoy P, Zuckerman AJ, Gerety RJ
Bureau Biologics, 8800 Rockville Pike, Bethesda, MD, 20205
Intervirology; 15(2):82-86 1981

The PLC/PRF/5 human hepatoma cell line producing hepatitis B surface antigen (HBsAg) was studied to determine whether infectious hepatitis B virus (HBV) was also being produced. Two chimpanzees with no previous exposure to HBV and no serologic markers of past or active HBV infection were inoculated iv with 50 ml of either tissue culture supernatant fluid (357 ng/ml HBsAg) or a suspension of cells disrupted by repeated freeze-thaw cycles (57 ng/ml HBsAg). No evidence of HBV infection was detected in either chimpanzee during 6 mo of evaluation. This study suggests that the expression of a portion of the HBV genome, when a portion or all of that genome has been incorporated in a host cell, can result in the production of HBsAg without infectious HBV. If it becomes possible to produce a similar expression of this portion of the genome by itself in nonmalignant cells, HBsAg without HBV may be produced in vitro for use in hepatitis B vaccines. (Author abstract) (21 Refs)

136. EFFECT OF MITOMYCIN-C AND ADRIAMYCIN ON CULTURED HUMAN HEPATOMA CELL CYCLE PROGRESSION.

Sano H, Sasaki F, Une Y, Hata Y, Nakanishi Y, Uchino J, Kasai Y
First Dept. Surgery, Hokkaido Univ. Sch. Medicine, Sapporo, Japan
Gan No Rinsho; 27(10):1200-1204,A-57 1981

Eighth generation C-HC-20 cultured human hepatoma cells with a population doubling time of 30.4 hr were separated into individual culture bottles containing 2 x 10(4) cells/2 cc and were treated with mitomycin C (MMC) and/or adriamycin (ADR). Histograms of the cultured cells were made hr 48 and 72 after treatment. On the basis of a standard human dosage of the MMC (4 mg) or the ADR (10 mg), the cells were treated with MMC (20, 2, 0.2, or 0.02 ug/ml) and/or ADR (50, 5, 0.5, or 0.05 ug/ml). Hr 48 after a 1-hr exposure to the MMC, a marked increase in G2-M phase cells were observed with low concentrations of the MMC. Continuous or 1-hr exposure of the cells to the ADR resulted in an increase in G2-M phase cells for up to hr 72 after treatment. On the basis of the results, it was hypothesized that administration of ADR during the 48 hr period after 1-hr administration of low-dose MMC would result in enhanced effects. (17 Refs) (In JPN)

137. GROWTH RATE OF HUMAN MALIGNANT TUMORS IN NUDE MICE WITH DIFFERENT GENETIC BACKGROUNDS: SELECTION OF STRAINS OF NUDE MICE FOR SCREENING OF ANTITUMOR AGENTS.

Maruo K, Ueyama Y, Hioki K, Saito M, Nomura T, Tamaoki N
Central Inst. Experimental Animals, Takatsu-ku, Kawasaski-shi, Kanagawa Pref. 211, Japan
Igaku No Ayumi; 116(10):825-827 1981

Into 90 male and female nude mice (6-to 8-wk old) of seven different strains, that had been reared under specific pathogen-free conditions, 1 x 10(6) cells of a human gastric cancer (poorly differentiated adenocarcinoma) that had been serially maintained for 25-34 generations sc in BALB/cA-nu mice were transplanted sc. The mice were killed 5 wk later, and the wt of the tumor and type of tumor tissue were determined. The tumors were successfully transplanted into all the CBA/N-nu, NFS/N-nu, NIH(s)-nu and C3H/HeN+-nu mice, but not into 11%, 40% and 25% of the BALB/cA-nu, C57BL/6N-nu and lasat mice, respectively. The av tumor wt for the CBA/N-nu mice was the highest followed by NFS/N-nu, NIH(s)-nu, C3H/HeN+-nu, BALB/cA-nu, lasat and C57BL/6N-nu mice in that order. The av tumor wt for the CBA/N-nu and NFS/N-nu mice was, respectively, 3.5 and 3x that for the BALB/cA-nu mice which are presently used most commonly. Tumors were not successfully transplanted into some of the mice in the group with a low av tumor wt. The difference in tumor wt between BALB/cA-nu and CBA/N-nu or C3H/HeN+-nu mice was statistically significant when analyzed by the t test. Similar results were obtained when human malignant lymphoma and human chronic myeloid leukemia cells were transplanted. Since tumor transplantability into NFS/N-nu and CBA/N-nu mice was high, and the growth of the tumor was rapid and relatively even, these mice are considered to be useful experimental animals. (10 Refs) (In JPN)

138. LIVER PLASMA MEMBRANES AND PROTEOGLYCAN PREPARED THEREFROM INHIBIT THE GROWTH OF HEPATOMA CELLS IN VITRO.

Kawakami H, Terayama H
Zoological Inst., Faculty Science, Univ. Tokyo, Hongo, Bunkyo-ku, Tokyo 113, Japan
Biochim Biophys Acta; 646(1):161-168 1981

Plasma membranes from rat liver or kidney inhibited the growth of hepatoma (AH-1 30) cells in vitro. AH-130 plasma membranes or RBC ghosts inhibited the growth of AH-130 cells less effectively. The inhibitory activity of liver plasma membranes was lost by heat treatment, or mild protease (papain or bromelin, but not trypsin or pronase) treatment, whereas it was retained after sialidase treatment or delipidation by ethanol/ether. Proteoglycan (proteoheparin sulfate) prepared from liver plasma membranes inhibited the growth of AH-130 cells, but heparin sulfate was less active. The inhibitory activity of liver plasma membranes seemed, however, not to be ascribable solely to proteoheparin sulfate associated with plasma membranes. Preliminary investigations suggested that the mol wt 40,000 component may be a major inhibitory principle in liver plasma membranes. (Author abstract) (18 Refs)

139. TREATMENT BY LIMITED SURGERY AND SPECIFIC IMMUNIZATION OF GUINEA PIGS WITH STAGE II EXPERIMENTAL CANCER.

Hunter JT, Ashley MP, Sukumar S, Sugimoto T, Zbar B, Rapp HJ, Yarkoni E
Lab. Immunobiology, NCI, NIH, Bethesda, MD, 20205
J Exp Med; 154(2):253-261 1981

Line 10 (L10) cells were obtained from diethylnitrosamine-induced guinea pig hepatocellular carcinoma. Tumors were induced in male Sewall Wright strain 2 guinea pigs by id injection of 10(6) L10 cells in the flank. Tumors were allowed to progress to stage II with palpable tumor and first draining lymph node evident. The next draining lymph mode appeared normal but contained tumor cells. Treatment at stage II involved (1) limited surgery: excision of the tumor and primary lymph node; (2) extensive surgery: excision of the tumor, primary lymph node, and more distant lymph nodes; or (3) immunotherapy: 1 or 2 days after surgery and 6-7 days later a mixture of irradiated tumor cells and adjuvant BCG cell walls (BCG CW) was injected id. Each animal received 2 x 10(8) irradiated tumor cells and 750 ug BCG CW, with a second vaccine injection on the contralateral flank 7 days later. After 21 days all 12 animals treated by limited surgery showed metastases. Of these, 3 rejected a new tumor challenge. All 12 animals treated by extensive surgery were cured, of which 9 rejected a new tumor challenge. Immunotherapy after limited surgery was no more effective than extensive surgery. It did provide immunity to further tumor challenge. Two doses of immunotherapy were required. The method indicates possibilities for cancer therapy in humans. (15 Refs)

140. A NEW APPROACH TO CANCER CHEMOTHERAPY: SELECTIVE ENHANCEMENT OF TUMOR BLOOD FLOW WITH ANGIOTENSIN II.

Suzuki M, Hori K, Abe I, Saito S, Sato H
Dept. Oncology, Res. Inst. for Tuberculosis and Cancer, Tohoku Univ., 4-1 Seiryomachi, Sendai 980, Japan
JNCI; 67(3):663-669 1981

Elevation of the mean arterial blood pressure to approx 150 mm Hg by infusion of angiotensin II resulted in an approx 5.7-fold selective increase in blood flow in tumor tissue without increasing blood flow in normal tissue. This finding of no autoregulation of blood flow in tumor tissue was made in an experiment on inbred DONRYU rats with sc transplanted AH109A solid tumors (Yoshida ascites hepatoma). Changes in tissue blood flow were measured by a thermo-electrical method. In another experiment in which DONRYU rats with sc transplanted AH272 solid tumors were used, the chemotherapeutic effect of mitomycin C on main tumors and lymph node metastatic foci was markedly enhanced in rats with angiotensin-induced hypertension, as compared to its effect in rats without angiotensin-induced hypertension. Thus a new approach to cancer chemotherapy has been demonstrated in which the delivery to tumor tissue of systemically administered anticancer drugs can be selectively enhanced. (Author abstract) (30 Refs)

141. DIFFERENTIAL LOCALIZATION OF HUMAN PANCREAS CANCER-ASSOCIATED ANTIGEN AND CARCINOEMBRYONIC ANTIGEN IN HOMOLOGOUS PANCREATIC TUMORAL XENOGRAFT.

Tan MH, Shimano T, Chu TM
(c/o Chu) Dept. Diagnostic Immunology Res. and Biochemistry, Roswell Park Memorial Inst., 666 Elm St., Buffalo, NY, 14263
JNCI; 67(3):563-569 1981

Tissue localization of a human pancreas cancer-associated antigen (PCAA) and carcinoembryonic antigen (CEA) was studied in a homologous pancreatic tumoral xenograft, a human pancreatic cancer line established from ascites (AsPC-1), with the use of the indirect immunofluorescence technique with specific anti-PCAA and anti-CEA antisera. Histologically, AsPC-1 xenograft was composed of mucinous adenocarcinoma of variable size and degree of glandular differentiation. PCAA was selectively associated with the columnar cytoplasm, was involved primarily in the epithelial proliferation, and originated at the basal aspect of the glands. In contrast, CEA appeared diffuse and was found predominantly in the cuboidal cells, with higher intensity at the luminal border and in mucin. Furthermore, growth comparison of the AsPC-1 adenocarcinoma revealed that, except in the juvenile gland that was morphologically consistent with Grade 1 (G1) carcinoma in situ, the number of PCAA-positively stained cells decreased from G1 to Grade 4 epithelial differentiation. In well-differentiated adenocarcinoma and degenerating adenocarcinoma, cells positive for PCAA were released into the lumen of the glands, whereas in poorly differentiated adenocarcinoma these cells were often scattered singly and/or in focal clusters and disappeared in very poorly differentiated adenocarcinoma. This study showed that the pCAA was different from CEA in its immunologic reactivity and distribution in its homologous tumoral tissues, in which PCAA was predominantly associated with the proliferative phase of the malignant epithelium. These results also indicated the potential applicability of this antigenic expression in the etiology, disease grading, and staging of human pancreatic cancer. (Author abstract) (16 Refs)

142. LIVER TUMOURS FOLLOWING STREPTOZOTOCIN ADMINISTRATION IN RATS AND THE EFFECTS OF PANCREATIC ISLET CELL TRANSPLANTATION.

Lauder I, Abascal J, Cartwright RA, Farndon JR, Johnston ID
Dept. Pathology, Univ. Leeds, Leeds, England
Carcinogenesis; 2(8):799-803 1981

Female inbred WAG rats were divided into four groups. Group 1 consisted of normal rats. Group 2 consisted of normal rats given intraportal isotransplantation of pancreatic islet cells (800-2,900 pancreatic islets). Group 3 contained rats with diabetes mellitus induced by a single injection of streptozotocin (50 mg/kg). Group 4 consisted of rats made diabetic by administration of streptozotocin and then given intraportal isotransplantation of pancreatic islet cells. Animals were sacrificed at regular intervals. All tumors found occurred in the liver, except for one kidney tumor. Hepatic neoplastic nodules were found only in the groups receiving streptozotocin (groups 3 and 4). The highest frequency of hepatic cysts and nodules occurred in rats treated with both streptozotocin and islet cell isotransplantation. The results indicate that the streptozotocin, and not diabetes, is responsible for the incidence of tumors. Since streptozotocin is used to treat human cancer patients, close monitoring of its use is urged. (27 Refs)

143. PROMOTION BY UNSATURATED FAT OF AZASERINE-INDUCED PANCREATIC CARCINOGENESIS IN THE RAT.

Roebuck BD, Yager JD, Longnecker DS, Wilpone SA
Dept. Pharmacology, Toxicology, Dartmouth Medical Sch., Hanover, NH, 03755
Cancer Res; 41(10):3961-3966 1981

Diet has been shown to modulate the incidence of a wide variety of chemically induced cancers in animals. Various diets fed either during the initiation stage or the postinitiation (promotion) stage of carcinogenesis were evaluated for their ability to modulate the incidence of pancreatic cancer. Male Wistar/Lewis rats were treated with multiple injections of the pancreatic carcinogen, azaserine, during a 6-to 7-wk-long initiation phase and were autopsied after a postinitiation phase of 34 or 44 wk. The following diets were evaluated for their effects on the incidence of pancreatic neoplasms during each stage of carcinogenesis: high saturated fat; two high unsaturated fats (corn oil and safflower oil); low protein; and caloric restricted. A purified control diet was fed during that stage when the test diets were not fed. The incidence of pancreatic adenomas and adenocarcinomas was evaluated by light microscopy. Feeding of the caloric-restricted diet during the initiation phase suppressed the pancreatic neoplasm incidence. None of the other diets tested had an effect on the incidence of pancreatic cancer during the initiation phase. During the postinitiation phase, both high-unsaturated-fat diets but not the high-saturated-fat diet significantly elevated the pancreatic neoplasm incidence. The low-protein and caloric-restricted diets had no effect on the neoplasm incidence when fed during the postinitiation phase. Thus, diets high in unsaturated fat appear to promote pancreatic carcinogenesis in the azaserine-treated rat while a diet high in saturated fat failed to show a similar degree of enhancement of pancreatic carcinogenesis. (Author abstract) (42 Refs)

AUTHOR INDEX WITH CITATION NUMBERS

Abascal J 142
Abe I 140
Adachi H 27
Akahane Y 52
Akiyoshi T 80
Albukerk J 85
Alderson MR 124
Anastasi B 8
Ando K 18
Andoh H 68
Aoike A 131
Aoki Y 32
Armijo R 116
Aron BS 15
Asai T 96
Asakawa N 13
Asbell SO 93
Ashizawa A 19
Ashley MP 139
Awrich AE 79
Ayabe H 19
Babcock L 98
Bacchella T 90
Bagnulo H 37
Baldizan J 100
Barkan A 87
Bartholomew LG 103
Bartles DM 36
Bartok I 22
Bateman JR 77
Battista JJ 73
Battista RN 111
Bell RM 97
Bettarello A 90
Bi H 66
Bogliaccini G 37
Bondestam S 7
Bonfils S 89
Bonnefond A 89
Borner JW 51
Bosch R 119
Bowles MH 83
Branchini L 34
Breuer H 41
Bruneton JN 25
Buzby GP 95
Carpentier YA 55
Carro Tunessi M 117
Carter JT 123
Carter S 42
Cartwright RA 142
Chan KK 77
Chan WC 109
Chauhan MA 10
Chen M 21
Chiba J 70
Chlebowski RT 77
Cho K 12
Christensen M 16
Chu TM 141
Cipriano E 125
Cohle SD 84
Comis RL 76
Comstock GW 112
Condie RM 51
Copeland JA 135
Correa P 118
Coulson AH 116
Cresci A 115
Crouch R 102
Dahlin DC 103
De Barros Mott 90
De Rocco K 125
Delespesse G 55
Detels R 116
Dintsman M 87
Dozois RR 103
Dressel T 51
Druart ML 55
Dudley FJ 53
Duschanek P 22
Ebina T 54
Eguchi F 68
El-Salhy M 48
Ellison EC 47
Estefan A 100
Everett GD 88
Ezaki T 94
Fabri PJ 47
Farndon JR 142
Feinstein AR 111
Fernandez Giuli 117
Ferris EJ 10
Fischer A 102
Fitzgerald RH 36
Fletcher WS 79
Fortner JG 58
Frick MP 51
Fryd DS 51
Fujii R 57
Fujimoto S 4
Fujimoto S 78
Fujita M 133
Fujita S 30
Fukuda S 13
Fukumoto Y 18
Fukushima H 91
Furihata C 134
Furukawa H 32
Furusawa M 40
Gajl-Peczalska 51
Gao C 66
Gelfand MJ 15
Gerety RJ 135
Gianelli Ferrer 117
Gibson PR 53
Ginsberg SJ 76
Godines R 64
Gomi M 68
Gonzalez A 116
Gonzalez-Crussi 108
Goodale RL 51
Gotoh M 68
Graham DY 64
Gratton J 89
Greenway B 46
Griffen WO 97
Grimelius L 48
Groner J 41
Grunow WA 83
Haenszel W 118
Haines K 49
Haines K 50
Ham JM 102
Hanafusa T 35
Hara Y 68
Harada T 57
Hasegawa H 86
Hashiguchi F 68
Hashimoto K 27
Hashimoto S 57
Hashimoto Y 57
Hata Y 136
Hatayama Y 62
Hattori T 56
Heading RC 14
Helwig EB 26
Hidaka S 19
Higasa Y 35
Higasa Y 39
Hioki K 137
Hirai S 6
Hirano T 57
Hirasawa M 68
Holt S 14
Homma T 45
Hopkins RA 110
Hori K 140
Horwitz RI 111
Hoshi K 132
Hosoda Y 65
House FR 49
House FR 50
Howard CR 135
Humphries P 127
Hunter JT 139
Huruta S 52
Ichimanda M 19
Ihamaki T 104
Iida F 33
Ikeuchi H 96
Ilstrup DM 71
Imanishi J 81
Imre J 101
Inaguma H 129
Inokuchi H 131
Inokuchi K 60
Iqbal MJ 46
Irie RF 44
Ishida M 65
Ishigami H 78
Ishii T 57
Ishikawa T 38
Ishikawa Y 57
Isono K 38
Issell BF 76
Ito H 81
Iwanaga T 32

Izumi A 82
Izumi T 129
Jakobovits AW 53
Jakobsen PM 16
Jenkins FM 97
Jin S 66
Johansen P 16
Johnson CJ 120
Johnson JA 47
Johnson PJ 42
Johnson PJ 46
Johnston ID 142
Johnston J 26
Jurco S 84
Jussawalla DJ 113
Kabuto T 32
Kagawa K 28
Kaibara N 27
Kamano Y 129
Kamijyo K 52
Kanashima R 40
Kanayama H 82
Kano K 96
Kano T 60
Kanyar B 22
Karvonen AL 5
Kasahara T 54
Kasai Y 136
Kasajima M 65
Kato H 35
Kato H 39
Katsumi M 67
Kawa S 45
Kawachi T 130
Kawaguchi M 80
Kawahara K 19
Kawai K 131
Kawai K 30
Kawai K 4
Kawakami H 138
Kawashima Y 61
Kekki M 31
Ketzoian Aparik 117
Kido Y 68
Kidokoro T 1
Kidokoro T 69
Kieninger G 99
Kimoto K 4
Kimura O 27
Kishida T 81
Kitade F 61
Kitoh M 91
Kiyosawa K 52
Koba F 80
Kobayashi K 12
Kobayashi N 39
Kobayashi S 6
Kobayashi T 68
Koch H 63
Koch M 43
Kodama T 18
Kodama Y 60
Koga A 6
Koga M 6
Koga S 27
Koga S 82
Koga Y 19
Kohli Y 30
Kohno M 35
Koide M 1
Koide M 69
Koike Y 52
Komuro K 68
Kondo T 1
Kondo T 69
Kondo Y 11
Konishi Y 94
Konno T 91
Koslowski L 99
Kotake Y 57
Kouzu T 38
Koyama K 70
Kubota H 86
Kubota M 11
Kuga K 38
Kumashiro R 60
Kummer D 99
Kurihara M 129
Kurokawa Y 134
La Rosa F 115
Lai CL 109
Lam KC 109
Lanza FL 64
Lauder I 142
Laxen F 24
Lecomte P 25
Lehtola J 106
Leibel SA 93
Lepore M 125
Liddell FD 122
Linos DA 103
Liu T 21
Longnecker DS 143
Ma Z 66
Machado MC 90
Machida T 96
Maekawa T 1
Maekawa T 69
Maeta M 82
Makuuchi H 11
Makuuchi M 86
Mann GF 135
Marre B 75
Maruhashi K 35
Maruo K 137
Maruyama M 38
Maruyama S 129
Mastrandrea V 115
Matsuda S 18
Matsukawa Y 35
Matsukuchi T 40
Matsukura N 130
Matsumoto F 1
Matsumoto F 69
Matsumoto T 1
Matsumoto T 69
Matsuno M 70
Maurer R 119
McIrath DC 71
McKechnie JC 64
McKechnie JC 84
McLoughlin GP 14
McPherson TA 43
Medina E 116
Medina E 75
Mege RM 86
Melia WM 42
Menjo M 132
Mignon M 89
Miki K 39
Miller AB 126
Minami H 19
Minami T 78
Misei Y 13
Mitomi T 11
Mitros FA 88
Miura T 19
Miura T 57
Miura Y 96
Miyagawa T 1
Miyagawa T 69
Miyagi N 94
Miyano Y 27
Miyata M 54
Miyazaka K 129
Miyazaki M 18
Miyazaki M 40
Miyazaki M 78
Miyazaki S 80
Mizuno Y 35
Monteiro da Cun 90
Morimoto T 18
Morino K 130
Morioka Y 54
Morton DL 44
Mukaihara S 39
Mullen JL 95
Muller-Wallraf 41
Munro-Neville A 42
Muraishi N 6
Murakami K 81
Murakami T 132
Murayama Y 29
Murphy K 10
Nagata A 52
Nagata T 33
Nagata T 52
Nagayama A 68
Nakagawa H 1
Nakagawa H 69
Nakajima A 132
Nakajima M 4
Nakajima Y 35
Nakamoto K 35
Nakamura K 62
Nakamura K 68
Nakamura Y 128
Nakamura Y 19
Nakanashi K 56
Nakanishi I 65
Nakanishi Y 136
Nakano A 56
Nakao S 19
Nakasaki H 11
Nakatani K 94
Nakayama H 57
Nakayama T 6
Nakazawa S 13
Nakazora M 35
Nampei S 133
Natekar MV 113
Nawata J 18
Nelson RS 64

Nemeth A. 101
Newhouse M. 121
Niimoto M. 56
Nimura Y. 13
Nishidoi H. 27
Nisson S. 41
Nogawa T. 57
Nomura T. 137
Noto T. 11
Nozawa K. 52
Numa Y. 18
O'Leary J. 51
Odaka M. 38
Ogata M. 6
Ogata Y. 65
Ogiwara M. 62
Ogiya I. 1
Ogiya I. 69
Ogoshi K. 11
Oguchi H. 45
Ohgaki H. 130
Ohmachi S. 40
Ohmagari T. 19
Ohno Y. 134
Ohyama N. 78
Okabe M. 6
Okada K. 61
Okajima K. 61
Okamura H. 1
Okamura H. 69
Okita K. 18
Okui K. 129
Okui K. 78
Okuma K. 74
Onoda S. 38
Order SE. 93
Orellana M. 116
Osaki Y. 27
Osaki Y. 82
Oshimi K. 54
Ota K. 74
Ozawa K. 1
Ozawa K. 69
Page CP. 98
Pannelli F. 115
Paolini A. 125
Papachristou DN. 58
Parker EF. 36
Patel GK. 83
Peetz M. 79
Petri A. 101
Petri I. 101
Pignata D. 100
Pomi J. 100
Pomi J. 37
Postlethwait RW. 110
Praderi R. 100
Praderi R. 37
Priest RJ. 17
Rajagopalan TR. 113
Rajvanshi VS. 92
Rapp HJ. 139
ReMine WH. 71
Reddy RR. 17
Reed PI. 49
Reed PI. 50
Rees WV. 44
Remenar E. 22
Rider WD. 73
Rios-Dalenz J. 118
Roder OC. 72
Rodriguez A. 75
Roebuck BD. 143
Rominger CJ. 93
Rosato EF. 95
Rovigo Guanco A. 117
Ruggieri M. 125
Rushton L. 124
Ruttner J. 119
Ryan JA. 98
Ryden VM. 77
Saha S. 15
Saito M. 137
Saito M. 54
Saito S. 140
Saito T. 39
Saitoh Y. 29
Saitsu H. 6
Sakamoto R. 68
Saksena A. 92
Sakuramoto K. 61
Sano H. 136
Santamaria J. 75
Sasaki F. 136
Sasaki M. 18
Sasaki Y. 129
Sata M. 6
Satake K. 12
Sato H. 140
Sato H. 38
Sato M. 133
Sato O. 1
Sato O. 69
Sato T. 70
Satomura K. 35
Saukkonen M. 31
Sawada T. 81
Sawada Y. 1
Scandroglio I. 34
Schmitz-Moorman. 2
Schuler G. 119
Schumann BM. 17
Schwerk WB. 2
Sekiya T. 39
Seo Y. 40
Snafik A. 59
Shankur R. 92
Shi EC. 102
Shibata K. 19
Shimada A. 68
Shimano T. 141
Shimizu N. 82
Shimoyama T. 57
Shirabe J. 19
Shirakabe H. 129
Shiratori T. 94
Shirazi SS. 88
Sicart M. 25
Sipponen P. 104
Sipponen P. 23
Sipponen P. 31
Siurala M. 105
Skelly J. 135
Slayden JE. 10
Smith PL. 10
Smith PL. 49
Smith PL. 50
Snoy P. 135
Sonoda H. 11
Spitzer WO. 111
Stein TP. 95
Sugimoto T. 139
Sugita T. 11
Sugitani M. 1
Sugitani M. 69
Sukumar S. 139
Sunagawa M. 132
Sutherland GR. 8
Suwa B. 129
Suzuki M. 140
Suzuki Y. 52
Tabor E. 135
Tabuchi Y. 29
Tabuse K. 67
Taguchi T. 133
Tajima T. 11
Takagi Y. 70
Takahashi H. 39
Takahashi K. 54
Takahashi M. 134
Takahashi M. 78
Takahashi M. 96
Takahashi T. 38
Takaki T. 57
Takamoto T. 18
Takamura N. 134
Takemiya M. 91
Takeshita K. 132
Takiguchi Y. 29
Tamada R. 60
Tamaoki N. 137
Tan MH. 141
Tanaka K. 35
Tanaka T. 6
Tanaka Y. 11
Tanaka Y. 131
Tani T. 56
Taniguchi H. 32
Taniguchi K. 32
Taniguchi T. 38
Tanimura H. 39
Tatsumi S. 12
Taylor T. 51
Taylor TV. 14
Terasawa T. 32
Terayama H. 138
Texter EC. 83
Toge T. 56
Tomita M. 19
Tomoda H. 40
Tomoda N. 6
Tong MJ. 77
Tosato F. 125
Tosi F. 34
Toth J. 22
Tothill P. 14
Truong L. 84
Tsubota W. 18
Tsuji H. 80
Tsuji Y. 19
Tsuji Y. 57
Tsukahara Y. 133
Tsuru A. 6

Tsuzuki T 65
Tune JM 83
Uchida Y 19
Uchida Y 57
Uchino J 136
Uchiyama Y 19
Uematsu S 38
Ueyama Y 137
Ugarte N 108
Umeyama K 12
Une Y 136
Uosumi G 131
Ureshino J 6
Uzawa H 91
Van Dyk J 73
Van Heerden JA 71
Varis K 107
Vidal Gaggiano 117
Wagai K 1
Wagai K 69
Wagener C 41
Wakasugi H 54
Walters CL 49
Walters CL 50
Wang GQ 3
Watabe H 1
Watabe H 69
Watanabe S 18
Watanabe S 20
Weiland WH 71
Weiner JM 77
Werner Covalesk 117
Werner JB 123
Westbrook K 10
Wilander E 48
Wilkins JR 112
Willen R 48
Williams R 42
Williams R 46
Wilpone SA 143
Wolloch Y 87
Wu HH 114
Yager JD 143
Yagi A 61
Yamada S 61
Yamada Y 56
Yamaguchi K 4
Yamaguchi K 91
Yamamoto S 12
Yamamura S 52
Yamanouchi T 68
Yamasaki S 86
Yamaura Y 62
Yamazaki Y 38
Yanagawa E 56
Yano M 6
Yarkoni E 139
Yasui A 129
Yasuna O 62
Yeole BB 113
Yeshurun D 87
Yokogawa S 9
Yokomizo S 6
Yoshida C 57
Yoshida K 39
Yoshida K 96
Zbar B 139
Zuckerman AJ 135

CANCER LINE

More Than Just A Fancy Name

Mention CANCERLINE to your librarian and the world's foremost collection of cancer information is at your disposal. With the help of this computerized data system, you can obtain information on the following:

Cancer Literature

The literature date base, **CANCERLIT**, allows you to survey more than 3,000 biomedical journals for information on your topic of interest. Your search will also alert you to meeting proceedings, monographs, and books published in that area. Informative abstracts averaging 200 words are provided with each citation;

Current Cancer Research

The data base **CANCERPROJ** allows you to retrieve descriptions of current work in any cancer research area. The descriptions, which state research objective, methodology, and experimental results, are supplied for projects underway in 77 countries around the world.

Cancer Therapy Protocols

The **CLINPROT** section of CANCERLINE is designed primarily for clinicians. It provides detailed summaries of currently active experimental protocols for any cancer site, agent, or type.

Ask your biomedical librarian about CANCERLINE.
CANCERLINE is sponsored by the International Cancer Research Data Bank—a program of the National Cancer Institute.

CANCERLINE

Keep Up with the Cancer Literature

Each Month You Can Receive Abstracts Covering Your Specialty Area

- This convenient service — called Auto SDI* — is as near as your nearest biomedical library. Discuss your research interests with the librarian who will design an appropriate search strategy.
- Abstracts of the latest published literature are searched automatically each month and those related to your interests are delivered to you on a regular basis.
- The abstracts you receive are selected from more than 4,000 monthly entries made into CANCERLIT — the extensive cancer literature data base of the National Cancer Institute.

Talk With Your Librarian About the Auto SDI Service TODAY.

*Auto SDI stands for Automatic Selective Dissemination of Information. It is a service provided to you, at minimal cost, by the International Cancer Research Data Bank (ICRDB) — a part of the National Cancer Institute.

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). CANCERGRAMS are available from NTIS on a standing order basis at $2 each for North American (Canadian) addresses and $3 each for other addresses. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). CANCERGRAMS are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT 19/82/02

NCI/ICRDB/CT19 82/02

PB82-939402

INTERNATIONAL CANCER RESEARCH DATA BANK

ICRDB CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/02

FEBRUARY, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy ***If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:***

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
MAR 25 1982
U. S. GOVT. PUBS.
DEPOSITORY 376

VISIT THE ICRDB BOOTH DURING THE ASCO/AACR MEETINGS FOR COMPLEMENTARY SEARCHES OF CANCERLINE IN ADDITION TO SAMPLE COPIES OF ICRDB PUBLICATIONS.

In this issue:

- SCREENING AND DIAGNOSIS 1-9
- PATHOLOGY, STAGING, AND PROGNOSIS 10-19
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS 20-32
- SURGICAL AND RADIATION THERAPY..... 33-52
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY 53-56
- SELECTED CLINICAL CORRELATIONS..... 57-61
- REHABILITATION ASPECTS 62
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER 63-74
- SELECTED PRE-CLINICAL STUDIES 75-88

SCREENING AND DIAGNOSIS

1. DIAGNOSIS OF OCCULT GASTROINTESTINAL LESIONS BY STOOL GUAIAC TESTING IN A GERIATRIC HOSPITAL.

Mangla JC, Pereira M, Murphy J
Monroe Community Hosp., 435 East Henrietta Road, Rochester, NY, 14603
J Am Geriatr Soc; 29(10):473-475 1981

In a long-term care facility, the fecal guaiac test for occult blood was used as a screening method to detect gastrointestinal (GI) bleeding lesions. The study involved 450 chronically ill hospitalized patients whose av age was 70 yr. Each underwent

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20. 3173/2:

6 fecal guaiac tests for three consecutive days while receiving a standardized meat-free, high-fiber diet. The 21 patients in whom the fecal hemoccult test yielded positive findings were further studied with x-ray upper GI series, barium enema, and fiberoptic examination of the upper and lower GI tract when necessary. In a 4.7% of this population, the guaiac test gave positive results, which usually involved only one or two of the six guaiac slides. On further study it was found that two patients had large-bowel tumors, five had duodenal ulcers, one had gastric cancer, and seven had diverticulosis. The incidence of colon cancer in this population was the same as that reported in other studies, but the incidence of duodenal ulcers was high. In 20 of the 21 patients with positive test findings, a lesion of the GI tract was found. The therapeutic implications of such screening are important. This study emphasizes the value of routine fecal hemoccult testing of whole institutional populations once or twice a yr. (Author abstract) (11 Refs)

2. EARLY DIAGNOSIS OF GASTRIC CANCER. THE POSSIBILITY OF DELIMITING HIGH RISK GROUPS.

Mollmann K-M
Medical Dept. C, Herlev Univ. Hosp., DK-2730 Herlev, Denmark
Dan Med Bull; 28(3):89-92 1981

With the ultimate aim of identifying high risk groups for gastric cancer, a program was set up whereby all patients who visited their general practitioners and fulfilled certain fixed symptomatic criteria were referred to a two-step endoscopic investigation. During the 2-yr period of the program, 1,480 patients over 40 yr of age were referred from a background population of 100,000, and gastric cancer was detected in 18 of them. The criteria for referral were tested with respect to the cancer diagnosis. It was found that a high-risk group can be identified consisting of all patients over 50 yr old who had upper abdominal discomfort lasting for more than a fortnight and/or wt loss/anorexia. A focus on this high-risk group would make it possible to diagnose up to 70% of all gastric cancer patients by examining only about 1% of the population per yr. (Author abstract) (23 Refs)

3. MERITS AND DEMERITS OF GASTRIC MASS SURVEY AS EVALUATED BY OUR CLINICAL EXPERIENCE.

Aono G, Takezoe K, Ohara T, Shimada K, Hisamichi S
Nakasone Clinic, Koushida-machi, Tochigi Prefecture, Japan
Gan No Rinsho; 27(11):1333-1338 1981

A gastric mass survey was evaluated based on the number of cases of gastric cancer overlooked during the survey, number of cases of gastric cancer diagnosed with the survey method, and the number of cases of cancer overlooked in the out-patient clinic examination. Of 737 patients with cancer diagnosed in the clinics, 594 did not have physical examinations and 121 did (22 were unclear). Definitive diagnosis of gastric cancer was made with gastric mass survey method in 58/737 cases, gastric cancer was overlooked for up to 3 yr in 61/737, and overlooked for up to 1 yr in 33/737. Of the 58 cases of gastric cancer definitively diagnosed with gastric mass survey method, 55 were resectable (29 early stage and 34 advanced stage) and 3 were unresectable. Of the 61 cases of gastric cancer overlooked for up to 3 yr, 33 were overlooked for up to 1 yr (14 early stage, 14 advanced stage, 5 uncertain), 19 were overlooked for up to 2 yr (2 early stage, 10 advanced stage, 7 uncertain), and 9 were overlooked for up to 3 yr (4 early stage, 3 advanced stage, 2 uncertain); the site of the tumors were in the cardiac region in 7/61, the gastric corpus in 25/61, and the region of the antrum in 29/61. While the resectability rate of the gastric cancers in the patients definitively diagnose with gastric mass survey was higher than that of patients diagnosed in the out-patient clinic, fewer patients with cancer were overlooked with a clinical examination within a 1-yr period than with the gastric mass survey during the same period. (6 Refs) (In JPN)

4. ULTRASONOGRAPHIC EVALUATION OF JAUNDICED PATIENTS: ACCURACY IN 246 CONTROLLED CASES.

Dalla Palma L, Rizzatto G, Bazzocchi M, Pozzi-Mucelli RS, Brizzi F, Maffessanti M
Istituto di Radiologia, Ospedale Maggiore, Via Stuparich, 1, 34125 Trieste, Italy
Radiol Med (Torino); 67(9):615-622 1981

Advantages and disadvantages of sonography were evaluated in jaundiced patients. In more than 3 yr, 246 jaundiced patients with bilirubin values greater than 3.5 mg/100 ml were examined. Differential diagnosis between obstructive and non obstructive jaundice was correct 95.6%. Degree of obstruction (DO) was recognized in 86.2%, and it has improved progressively from 80-92% in the last group of patients. DO was established in all intrahepatic, but only in 83.4% extrahepatic cases. Nature of the lesions was recognized in 69.1% correctly. Sonography can diagnose almost all neoplastic lesions, except the very small ones, but it cannot recognize inflammatory or medical stenosis. (23 Refs) (In ITA)

5. BENIGN FOCAL DISEASES OF THE LIVER.

Sandler MA, Marks DS, Hricak H, Madrazo BL, Petrocelli RD
Dept. Diagnostic Radiology, Henry Ford Hosp., 2799 W. Grand Blvd., Detroit, MI, 48202
Semin Ultrasound; 2(3):202-211 1981

The diagnosis of five benign focal diseases of the liver by radionuclide studies (RS) and by gray scale ultrasonography (US) is reviewed. US is useful as a second evaluation after RS when the latter are questionable or identify nonspecific lesions. US is the imaging modality of choice for hepatic cysts. US is important in the early diagnosis of pyogenic liver abscesses, and subsequent decrease in associated mortality. The US features of liver cell adenomas (LCA) and focal nodular hyperplasia (FNH) have not been extensively reported. The US and RS findings of both LCA and FNH appear to be variable, contrary to expectation, and not always different from one another; a possible differential diagnosis based on both RS and US is given. When a diagnosis of cavernous hemangioma is suspected from initial RS, the most diagnostic subsequent study is hepatic scintiangiography with delayed blood pool imaging; the US features will be variable and nonspecific. (50 Refs)

6. DIFFERENTIAL DIAGNOSIS OF CHOLESTASIS BY SONOGRAPHY AND ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY (ERC).

Karoff C, Van Husten N, Zierden E
Medizinische Klinik und Poliklinik, Klinik B der Universitat Munster, Westring 3, D-4400 Munster, W. Germany
Med Welt; 32(32/33):1202-1203 1981

Sonography and endoscopic retrograde cholangiography (ERC) were used to differentiate between intrahepatic and posthepatic cholestasis in 116 icteric patients. Choledocholithiasis was ultimately diagnosed 57 cases, stenosis due to tumor in 16, and no posthepatic obstruction was found in 43 patients. The sonographic findings were correct in 78% of all cases, false positive in 9%, false negative in 7%, and differentiation was impossible in 6%. The ERC findings were correct in 94%

of all cases, false positive in 0%, false negative in 1%, and differentiation was impossible in 5%. For the 16 tumor patients the sonographic diagnosis was correct in 7/16 cases, false in 5, and no diagnosis could be established in 4 cases. The ERC diagnosis was correct in 14/16 cases, false in 1, and no diagnosis could be established in 1. (15 Refs) (In GER)

7. PITFALLS IN THE DIAGNOSIS OF HEPATIC CYSTS BY COMPUTED TOMOGRAPHY.

Barnes PA, Thomas JL, Bernardino ME
Dept. Diagnostic Radiology, Univ. Texas System Cancer Center, M.D. Anderson Hosp. and Tumor Inst., 6723 Bertner, Houston, TX, 77030
Radiology; 141(1):129-133 1981

Seven patients with computed tomographic (CT) evidence of cystic hepatic lesions are presented. In these cases, CT could not reliably distinguish benign hepatic cysts from other intrahepatic and extrahepatic cystic lesions. The attenuation coefficients of simple cysts and inflammatory or neoplastic lesions were similar, and smooth margins occurred in all three of these conditions. It was not possible to visualize and differentiate lesion walls from the surrounding normal hepatic parenchyma in some cases. It is concluded that the specificity of CT in the differentiation of benign cysts and other lesions is lower in the liver than it is in other areas, such as the kidney, and that in cases of diagnostic uncertainty, biopsy should be performed. (Author abstract) (19 Refs)

8. PERCUTANEOUS TRANSHEPATIC BILIARY DRAINAGE IN OBSTRUCTIVE JAUNDICE. REPORT OF 19 CASES.

Severini A, Bellomi M, Cozzi G, Strada M, Orefice S, Saccozzi R
Istituto Nazionale Tumori, Via Venezian, 1, 20133 Milano, Italy
Radiol Med (Torino); 67(9):599-606 1981

Indications, results, limitations, and complications of percutaneous biliary drainage (PBD) were studied. During the period 1978-1980, PBD was performed in 19 patients with biliary obstruction due to primary cancer or metastases. Obstructive jaundice was diagnosed by sonography in 10, retrograde perendoscopic cholangiography in 2, and others by PBD. Bilirubin was greater than 7 mg/100 ml, av 19 mg/100 ml. Antibiotic prophylaxis was started 24 hr before and continued 5 days after procedure. Method and technique were described. Internal drainage was achieved in 11 cases, 4 had external and 4 were unsuccessful due to multiple parenchymal metastatic nodules. These results improved with time and reached 92% for the last 12 mo. Bilirubin values decreased rapidly and reached almost normal range in a few days. Complications occurred in four cases, but were serious only in two (hepatic abscess and biliary subcapsular cyst). Patients should be controlled carefully immediately after procedure and periodically every 30 days. In one living patient drainage is functioning 270 days later. (31 Refs) (In ITA)

9. CONTROLLED RESULTS OF A STANDARDIZED GASTRIC X-RAY EXAMINATION TECHNIQUE.

Langle I, Goidinger K, Schwamberger K, Aigner F
Universitatsklinik fur Radiologie, A-6020 Innsbruck, Austria
Roentgenblaetter; 34(8):294-297 1981

Two thousand patients were subjected to standardized gastric x-ray examination by a hypotonic double-contrast technique, using high-density, low-viscosity barium. The findings are compared with gastroscopic and, in some cases, histological findings for 241 cases. Both methods showed normal conditions in 112 cases, ulcers in 60, malignant tumors in 20, and polyps in 11. Early gastric carcinoma was suspected radiologically in eight cases, which was confirmed histologically in 3/8, while inflammatory changes of the mucosa with severe metaplasia, hyperplasiogenic polyps, and foveolar hyperplasia were found in the other five cases. Two benign submucous tumors were correctly diagnosed with both methods. Both x-ray and gastroscopy suggested malignant tumor in one case, but it was not confirmed histologically. The radiological findings were uncertain in 21 cases. (10 Refs) (In GER)

PATHOLOGY STAGING, AND PROGNOSIS

10. A CLINICO-PATHOLOGICAL STUDY OF CARCINOMA OF THE GALL BLADDER.

Shukla HS, Awasthi K, Naithani YP, Gupta SC
General Surgery, Inst. Medical Sciences, Banaras Hindu Univ., Varanasi 221 005 U. P., India
Indian J Cancer; 18(3):198-201 1981

Carcinoma of the gall bladder was studied retrospectively in 65 cases over a 10 yr period. Cases accounted for 12.9 5 of gall bladder operations. The predominant age group was 31-50 yr. Male/female ratio was 1:4.9. Symptoms included an abdominal lump (69.2%), jaundice (55.3%), and palpable liver (47.7%). Most cases presented in an advanced state, early stages being generally asymptomatic. Hematological, biochemical, and radiological findings were of no diagnostic value, although absolute WBC counts below 2,000/cubic mm may serve to differentiate cancer and benign disease. Among 45 cases explored by laparotomy, 1 was limited to the gall bladder, 25 showed local invasion, and 19 had widespread metastases. Pathological examination of 65 cases showed 43 adenocarcinomas, 9 anaplastic carcinomas, 5 papillary carcinomas, 5 secreting adenocarcinomas, two scirrhous carcinomas, and one epidermal carcinoma. All inoperable cases died within 4 wk of operation. Two cases treated by cholecystectomy showed recurrence within 4 mo. One cholecystectomy patient remained recurrence free after 1 yr. The high frequency of young females in a disease normally found among older women and the predominance of Hindu patients were unexplained. (25 Refs)

11. THE SIGNIFICANCE OF SUBMUCOSAL FIBROSIS IN MUCOSAL CARCINOMA OF STOMACH.

Lin CC, Taki K, Kuwabara N, Fukuda Y
Dept. Pathology, Kaohsiung Medical Coll, Kaohsiung, Republic of China
J Formosan Med Assoc; 80(1):93-100 1981

The significance of submucosal fibrosis (SMF) in mucosal carcinoma (MC) was studied in 44 patients (27 men, 17 women; 21-80 yr old) of MC with SMF, who were compared with 35 patients (22 men, 13 women; 21-70 yr old) with MC and 89 patients (59 men, 30 women; 21-81 yr old) with submucosal carcinoma (SM). The macroscopic classification of the 178 lesions found in 168 patients (48 lesions in the 44 cases of MC + SMF) is described. Well-differentiated carcinomas were observed in 25/35 MC, 30/44 MC + SMF, and 50/89 SM patients. Poorly-differentiated tumors were found in 10/25 MC, 14/44 MC + SMF, and 39/89 SM patients. In most of the MC + SMF cases, the SMF was mild, moderate, or marked in 9/44, 23/44, or 12/44 patients, respectively. In 6/35 patients with moderate or marked SMF, the SMF was invasive. Ulcers coexisted with SMF in 43/44 MC + SMF patients; in the remaining patient the SMF was close to an ulcer. The marked SMF noted in poorly- differentiated types was usually coexistent with a shallow ulcer, while well-differentiated types were deeply ulcerated. Only one case of the well-differentiated type exhibited a shallow ulcer. It was suggested that SMF in poorly-differentiated types of MC + SMF is due to an ulcer rather than to the character of the collagen-producing carcinoma. (11 Refs)

12. GASTRIC TUMORS IN PATIENTS WITH PULMONARY CHONDROMA OR EXTRA-ADRENAL PARAGANGLIOMA. AN ULTRASTRUCTURAL STUDY.

Wick MR, Ruebner BH, Carney JA
Section Publications, Mayo Clinic, Rochester, MN, 55905
Arch Pathol Lab Med; 105(10):527-531 1981

The histogenesis of a distinctive metastasizing intramural gastric tumor found in patients with extra-adrenal paragangliomas, pulmonary chondromas, or both, is unknown. By light microscopy, it has appeared to be of smooth-muscle derivation, and it has been interpreted as being epithelioid leiomyosarcoma. For further clues to its nature, we studied three examples by electron microscopy (2 obtained from patients with extraadrenal paragangliomas and 1 from a patient with pulmonary chondroma). Ultrastructurally, they were characterized by interdigitating cytoplasmic processes, plasma membrane-associated dense patches, an incomplete basement membrane, junctional complexes, randomly oriented filaments without periodicity, cytoplasmic dense bodies, pinocytotic vesicles, clustering of mitochondria, and rare cilia-features of normal smooth muscle tumors with classic histologic patterns. Thus, the findings suggest that the three tumors we studied are of smooth-muscle derivation. (Author abstract) (33 Refs)

13. GLOMUS TUMOR OF THE STOMACH ASSOCIATED WITH HEMATEMESIS: LIGHT AND ELECTRON MICROSCOPIC STUDY AND REVIEW OF CASES REPORTED IN JAPANESE LITERATURE.

Yoneyama K, Ishikawa H, Hanatani Y, Nagamura Y
Dept. Surgery, Isehara Kyoodo Hosp., 2-17-1 Sakuradai, Isehara 259-11, Japan
I To Cho; 16(8):837-841 1981

Histopathological examination of a glomus tumor of the stomach that was resected in a 27-yr-old woman presenting with massive hematemesis and melena showed a neoplasm consisting of irregular and swollen blood vessel lumens and many glomus cells. Ultrastructurally, the tumor consisted of smooth muscle cells and pericytes. Analysis of 22 cases of glomus tumor reported in Japan indicated that the glomus tumor may be an intermediate form between hemangiopericytomas and leiomyomas. It was thought important to include submucosal tumors (eg. carcinoid tumor and hemangiopericytoma) in the differential diagnosis of glomus tumors. Wide resection of the tumor was thought to be the preferred means of treatment. (21 Refs) (In JPN)

14. STOMACH POLYPS: CLINICAL AND THERAPEUTIC REMARKS.

Briccoli A, Guarasci N, Pezcoller C, Pirazzoli PP, Ricchi E, Saviano MS
Cattedra di Anatomia Chirurgica, Universita di Modena, Modena, Italy
Minerva Chir; 36(13/14):905-928 1981

In the period 1979-1980, seven cases of gastric polyps were studied. Five of these were adenomatous polyps; one was malignant and associated with large intestinal polyposis. The remaining two were histopathologically Peutz-Jeghers-type hamartomatosis polyps, limited to the gastric region without typical cutaneo-mucous stigmata. Diagnostic techniques are reviewed. All polyp-bearing patients should have a complete study of the digestive tract to ascertain character and diffusion. Adenomatous polyps can have malignant evolution and should be distinguished from pseudoneoplastic lesions. The importance of endoscopic examination and removal of complete polyps for histological study is stressed. Extent of resection depends on histologic type, location, number, and diffusion of lesions. Postsurgical recurrence or malignant evolution indicates the need for endoscopic follow-up. (23 Refs) (In ITA)

15. EVALUATION OF ESOPHAGEAL CANCER COMBINED WITH OTHER MALIGNANT TUMORS.

Niwase M, Inaoka M, Takada K, Asashima K, Komatsu S
·Second Dept. Surgery, Sapporo Medical Coll., Sapporo, Hokkaido, Japan
Gan No Rinsho; 27(11):1369-1372 1981

Of 113 patients with resectable esophageal cancer treated from 1965-1979, seven 7 men; 56-69 yr old had multiple cancers. The non-esophageal cancers were discovered in other organs in 2/7 patients at the time of curative surgery for the esophageal cancers. The multiple tumors were synchronous in three patients and occurred at different times in the other four. The second tumors were laryngeal cancer in one patient, lung cancer in one, gastric cancer in two, hepatic cancer in two, and tongue cancer in one. Except for the patient who developed gastric cancer 14 yr after resection of the esophageal cancer, the prognosis of the patients was poor: five died within 1 yr and one died within 2 yr of the surgery. Except for early detection of each of the tumors, no effective treatment modalities that would improve the prognosis of these patients were thought to currently exist. (16 Refs) (In JPN)

16. CONTRIBUTION TO THE CLINICAL ASPECTS AND PROGNOSIS OF GASTRIC CARCINOMA.

Hunicke H, Schroder H
Chirurgische Klinik, Bezirkskrankenhaus Gera, Strasse des Friedens 122, DDR-6500 Gera, E. Germany
Dtsch Z Verdau Stoffwechselkr; 41(4):192-199 1981

Three hundred and eight patients (210 men, 170 women, av age 66 yr) were subjected to surgery for gastric carcinoma during the period 1968-1978. Anemia was found in 108/380 cases, positive benzidine test in 113/200, serum protein levels below 6 g% in 166/366, anacidity in 162/180, and erythrocyte sedimentation rate below 40 mm during the first hr in 192/199. The frequency of blood group A was higher than in the general population of the same area. Adenocarcinoma was diagnosed in 155 cases, solid carcinoma in 45, scirrhous carcinoma in 64, ulcerated carcinoma in 12, fibrous carcinoma in 4, signet-ring-cell carcinoma in 3, colloid carcinoma in 3, round-cell carcinoma in 2, lymphosarcoma in 2, malignant leiomyosarcoma in 1, and reticulum-cell sarcoma in 2. The tumor was localized to the lower 2/3 of the stomach in 170 cases. Only palliative surgery was performed in 184 patients in advanced stage: upper partial resection in 5, lower partial (subtotal) resection in 143, gastrectomy in 34, and extended gastrectomy in 14. The av survival of these patients was 1-10 mo. Surgery with curative intent was performed in 196 cases: upper partial resection in 5, lower partial (subtotal) resection in 143, gastrectomy in 34, and extended in 14. The av survival of these patients was 10-30 mo. Sixty of the 196 patients died of recurrent tumor. The overall

5-yr survival rate was 10.1%; 17.5% for the patients treated with curative intent, and 20.8% after radical surgery. (16 Refs) (In GER)

17. PROGNOSIS OF CARCINOMA OF THE EFFERENT BILE DUCTS.

Grill W
Chirurgische Klinik, Akademisches Lehrkrankenhaus, Osswaldstrasse, 8130 Starnberg/See, W. Germany
Fortschr Med; 99(30):1174-1177 1981

The prognosis of 164 patients subjected to surgery for bile duct carcinoma with obstructive jaundice during a 15-yr period is evaluated. Gallbladder carcinoma was diagnosed in 18 cases, carcinoma of the hepatic duct in 46, carcinoma of the common bile duct in 55, carcinoma of the ampulla of Vater in 42, and duodenal carcinoma in 3. The postoperative mortality was 1/18 for gallbladder carcinoma, 5/46 for carcinoma of the hepatic bile duct, 5/55 for carcinoma of the common bile duct, 3/42 for carcinoma of the ampulla of Vater, and 0/3 for duodenal carcinoma. Some patients had fairly long survival, often in astonishingly good condition, even after palliative surgery. Fourteen per cent of the patients were already inoperable at the time of the first intervention, and tumor resection was possible in approx one fourth of the patients only. The prognosis was more favorable for carcinoma of the ampulla of Vater and duodenum than for carcinoma of the gallbladder, hepatic, and common bile ducts. Major operation is particularly justified on the distal bile duct, because it gives a real chance of cure. (no Refs) (In GER)

18. BILE DUCT CARCINOMA.

Goodnight JE
Section Pediatric Surgery, Univ. California, Davis, Medical Center, 2315 Stockton Blvd., Sacramento, CA, 95817
Surg Clin North Am; 61(4):981-986 1981

Bile duct carcinoma is found in 0.4% of autopsied patients. It occurs most frequently in the upper third of the bile duct. Almost all cases involve adenocarcinomas. The disease is apparently associated with other gastrointestinal diseases. Obstructive jaundice appears in most cases. Percutaneous transhepatic cholangiography provides the most reliable diagnostic results, although angiography, ultrasonography, endoscopic retrograde cholangiography, computerized axial tomography, and barium studies may provide useful information. The most desirable treatment is complete resection, but is possible in less than half of the cases. Treatments include hepatic-enteric bypass, liver transplantation, radiation therapy, and chemotherapy. Regardless of treatment prognosis is generally poor. Radical resection provides the best results, with a median survival time of 20 mo. Death usually results from bile obstruction, rather than from metastasis. Relief of obstruction usually increases survival time and improves the quality o f remaining life. Aggressive treatment is recommended. (41 Refs)

19. PRIMARY CARCINOMA OF THE GALLBLADDER: A REVIEW OF 67 CASES.

Tashiro S, Konno T, Mochinaga M, Watanabe E, Murata E, Uemura K, Yokoyama I
First Dept. Surgery, Kumamoto Univ. Medical Sch., Kumamoto, Japan
Kumamoto Med J; 34(1):1-12 1981

During the past 15 yr, 67 operation- or autopsy-confirmed cases of gallbladder cancer (GC) were treated. Of the 20 men and 47 women, 16 and 32, respectively were aged 60-79 yr. Among 18 subjected to radical resection, preoperative diagnoses included GC in 7, cholecystolithiasis in 8, and one each cancer of the bile duct, cancer of the liver, and cholecystitis. Preoperative correct diagnosis was made in 23 (34.3%) of the 67 patients and in 7/18 (40%) who underwent radical resection. Rate of correct preoperative diagnoses by various examinations was 1/24 with po-iv cholecystography, 3/23 with percutaneous transhepatic cholangiography, 3/17 with endoscopic retrograde cholangiography, 6/21 with ultrasonography, 2/9 with liver scintigraphy, and 21/36 (58.3%) with angiography. Angiography was the most useful diagnostic measure to determine disease within resectable stage. Radical resection resulted in 3-yr survival in 6/12, survival in 4/11. Mean survival in patients with spread beyond the gallbladder wall was 14.3 mo compared to 77.0 mo in those with cancer confined within the wall. Where cancer extends beyond the muscle layer, extended procedures should be considered including use of intraoperative radiation or arterial infusion of anticancer drugs. (12 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

20. AFP SERO-SURVEY AND EARLY DIAGNOSIS OF LIVER CELL CANCER IN THE QIDONG FIELD..

Zhu Y
Jiangsu Qidong Inst. Liver Cancer, Qidong, People's Republic of China
Zhonghua Zhongliu Zazhi; 3(1):35-38 1981

Results of a mass survey and early diagnosis of liver cancer using serum alpha fetoprotein (AFP) are described. Of 1,786,906 persons tested between 1971 and 1977, liver cancer was discovered in 1,026. With sensitive assay technics for AFP, the positive rates for liver cancer reaches 96.3%. An incidence rate of Stage I liver cancer in single surveys was found to be about 35% that increased to 76% in regular twice-a-yr surveys. The postoperative 2-yr survival rate of Stage I liver cancer patients was 69%. The 5-yr survival rate of 117 surgical cases of liver cancer was 26%. (7 Refs) (In CHI)

21. PRODUCTION OF ALPHA-FETOPROTEIN, NORMAL SERUM PROTEINS, AND HUMAN CHORIONIC GONADOTROPIN IN STOMACH CANCER: HISTOLOGIC AND IMMUNOHISTOCHEMICAL ANALYSES OF 35 CASES.

Kodama T, Kameya T, Hirota T, Shimosato Y, Ohkura H, Mukojima T, Kitaoka H
Pathology Div., Natl. Cancer Center Res. Inst., 5-1-1, Tsukiji, Chuo-ku, Tokyo 104, Japan
Cancer; 48(7):1647-1655 1981

By immunoperoxidase histochemical staining of formalin-fixed paraffin-embedded sections, the production of alpha-fetoprotein (AFP), albumin (ALB), transferrin (TF), alpha-1-antitrypsin (AAT), and human chorionic gonadotropin (HCG) was examined in 35 operatively resected stomach cancers with elevated serum AFP levels (higher than 20 ng/ml as determined by radioimmunoassay). Cells positive for AFP were found in 19 cases (54%). In 29 cases (83%), some tumor cells contained normal serum proteins (ALB, TF, or AAT). All 19 tumors with AFP-positive cells also stained positively for two or three kinds of normal serum proteins. In some cases, AFP and normal serum proteins were localized in the same cells. There were two cases in which metastatic tumors produced AFP, whereas the primary sites did not. In nine cases (26%), HCG was present in tumor cells and HCG- and AFP-positive cells were coexistent in six tumors. Histologic examination of AFP-producing stomach tumors revealed medullary or papillotubular arrangements with marked nuclear atypia and eosinophilic granular or clear cytoplasms containing no glycogen or mucin. Some tumors with medullary patterns resembled liver cell carcinomas. Concordant phenotypic expression of AFP and normal serum protein production appears to be a general feature of AFP-producing tumors such as liver cell carcinoma, yolk sac tumor, and stomach cancer. (Author abstract) (47 Refs)

22. COMPARATIVE STUDY OF GAMMA GLUTAMYL TRANSFERASE, ALKALINE PHOSPHATASE AND ITS ALPHA1 ISOENZYME AS BIOLOGICAL INDICATORS OF LIVER METASTASES.

Viot M, Thyss A, Viot G, Ramaioli A, Cambon P, Schneider M, Lalanne CM

Centre Antoine-Lacassagne, 36 Voie Romaine, 0654 Nice Cedex, France

Clin Chim Acta; 115(3):349-358 1981

Serum of patients with various malignant diseases (331) and of healthy controls (101; 48 male, 53 female) was compared. The alpha1 isoenzyme of alkaline phosphatase (AP) was determined relative to the variation of total AP (TAP) and gamma glutamyl transferase (GGT) levels. TAP and GGT were assayed on the Centrifichem System 400. Electrophoretic fractionation of samples allowed identification of four AP isoenzymes: alpha1 AP (a1AP), liver, bone and intestine fractions. Studies were conducted in patient groups without secondary hepatic lesions (101) and those with liver metastases (75); and in groups with alcoholic cirrhosis (24) and with acute viral hepatitis (30). Compared to GGT and TAP, the a1AP test was more sensitive and more specific being capable of detecting 97% of the liver metastases with a specificity of 90%. (27 Refs)

23. UPDATE ON PANCREATIC POLYPEPTIDE AS A SPECIFIC MARKER FOR ENDOCRINE TUMOURS OF THE PANCREAS AND GUT.

Oberg K, Grimelius L, Lundqvist G, Lorelius L-E

Dept. Internal Medicine, Univ. Hosp., S-750 14 Uppsala, Sweden

Acta Med Scand; 210(3):145-152 1981

Serum levels of pancreatic polypeptide (PP) were determined in 31 patients with endocrine tumors, localized in the pancreas (n = 16), small intestine (n = 13) and respiratory tract (n = 2). Two further patients with laxative abuse were investigated. Elevated serum levels in the peripheral circulation were noted in 56% of the patients with pancreatic tumors, in 60% of those with gut or bronchial tumors and in both patients with laxative abuse. Our study suggests that the elevated PP concentrations found in connection with endocrine gastrointestinal tumors originate from non-tumor pancreatic PP cells and only occasionally from the tumor. PP is a valuable tumor marker for endocrine gastrointestinal tumors, although it is not specific for pancreatic tumors. Certain inflammatory diseases, renal function and consumption of laxatives must be considered when evaluating elevated PP levels. Serum PP seems to be of limited value for evaluating the response to cytotoxic therapy. (Author abstract) (19 Refs)

24. SOMATOSTATIN, GASTROINTESTINAL PEPTIDES, AND THE CARCINOID SYNDROME.

Long RG, Peters JR, Bloom SR, Brown MR, Vale W, Rivier JE, Grahame-Smith DG

Gastrointestinal Lab., St. Thomas' Hosp., London SE1 7EH, England
Gut; 22(7):549-553 1981

During a control infusion noradrenaline and alcohol each provoked carcinoid flushing in four of five patients and pentagastrin in two of five patients. When tetradecapeptide somatostatin was infused on another day no patient flushed at any time, even when 16 ug of either noradrenaline or pentagastrin were administered. Carcinoid flushing was not associated with release of gastrin or any of the other vasoactive or postprandially released gut regulatory peptides measured. In a sixth patient with severe prolonged carcinoid flushing, sc Des AA1,2,4,5,12DTrp8 somatostatin markedly reduced the incidence and severity of flushing for 2 days. Somatostatin is thus a potent inhibitor of carcinoid flushing, but no evidence has been found for the gut hormones measured to be mediators of flushing. (Author abstract) (21 Refs)

25. ROLE OF GLUCOSE-1-PHOSPHATE IN TOTAL PARENTERAL NUTRITION. STUDY OF PHOSPHORIC HOMEOSTASIS AND ITS HEPATIC FUNCTION.

Palmieri B, Barbieri GC, Del Torto T, Lugli R, Galetti A, Marchetti A, Miselli A

Cattedra di Anestesia e Rianimazione, Universita di Modena, Modena, Italy
Gazz Med Ital; 140(6):267-272 1981

The effect of administration of glucose-1-phosphate (GP) on the results of liver function tests was studied in 88 patients undergoing total parenteral nutrition (TPN). Among these patients were 20 who had gastric cancer and 4 who had esophageal cancer. The patients were divided in two equal-sized groups; an experimental group received GP (6 g/day in 500 ml), whereas a control group did not receive the GP. The results were analyzed and evaluated statistically. Relative to the control group, the experimental group showed significant decreases in levels of transaminases (SGPT, from 75 to 18; SGOT, from 68 to 12), bilirubinemia (from 2.4 to 0.9), and alkaline phosphatase (from 225 to 185). There was an increase in nitrogen balance from 1.8 to 2.9. No separate data were given for the cancer patients. The patients receiving GP showed normalization of hepatic function in a shorter period of time than did the controls. Addition of the GP had a favorable effect on the TPN, whether administered for short or prolonged periods. (21 Refs) (In ITA)

26. HEPATITIS B VIRUS PROFILE OF HEPATOCELLULAR CARCINOMA IN THE PHILIPPINES.

Lingao AL, Domingo EO, Nishioka K
Immunology Section, Dept. Medicine, UP-PGH Medical Center, Taft Ave., Manila, Philippines
Cancer; 48(7):1590-1595 1981

The hepatitis B virus (HBV) profile was investigated in 104 age-grouped hepatocellular carcinoma (HCC) patients and 84 controls from the Philippines. The HCC-control percent positivities of the HBV parameters are: HBsAg: 70-18; anti-HBs: 25-37; anti-HBc: 94-35; HBeAg: 5-2; anti-HBe: 60-30; HBV exposure rate: 97-57; current infection: 80-31. Male HCC anti-HBs positivity is significantly lower than in controls. Female HCC patients' anti-HBs are also lower than controls, but this difference is not statistically significant. Simultaneous presence of

HBsAg and anti-HBs was found only in male HCC patients. The mean anti-HBc titer of anti-HBs-positive HCC is higher than that of controls. That of HCC patients negative for both HBsAg and anti-HBs is also higher than the corresponding controls. Anti-HBe positivities of infected and noninfected but previously exposed HCC patients are not significantly different, in contrast to noninfected previously exposed controls whose anti-HBe is lower than those with current infection. The exposure rate prevalence of current infection, and the antibody responses to HBV of HCC patients suggest a close relationship between the two conditions in the Philippines. (Author abstract) (36 Refs)

27. METABOLIC ABNORMALITIES IN PATIENTS SUPPORTED WITH ENTERAL TUBE FEEDING.

Vanlandingham S, Simpson S, Daniel P, Newmark SR
Div. General Surgery, Scott and White Clinic, Temple, TX
JPEN; 5(4):322-324 1981

One hundred patients supported with enteral tube feeding were evaluated for metabolic abnormalities. Patients in the study were supported on tube feeding for an av 15.3 days. Most patients had neurological disease, organic brain syndrome, or a neoplasm. Thirty patients were supported with total parenteral nutrition (TPN) prior to tube feeding. Forty-seven patients were primary surgical patients and 28 of these were supported with TPN during the peri-operative period before conversion to tube feeding. No cases of gastric pooling greater than 100 ml or aspiration pneumonitis were observed. Three subjects developed diarrhea (6 or more stools per 24 hr). In these patients, enteral infusion was discontinued and TPN initiated. In the total patient group, 29% had at least one blood glucose determination of greater than 250 mg%. No cases of ketoacidosis or hyperosmolar coma were observed. Hyperglycemic states were frequently associated with systemic infections. Hyponatremia was observed in 31% of the patients. Hypokalemia was observed in 8% of the patients, usually in those treated with relatively large doses of insulin to stabilize glucose levels. Hypophosphatemia was observed in 30% of the patients and hypomagnesemia in 3%. Decreased zinc and copper levels were found in 11% and 3% of the patients, respectively. The results indicated that patients on tube feeding should be evaluated periodically for metabolic abnormalities. (5 Refs)

28. THE POSSIBILITY OF IN VITRO DETECTION OF INCREASED GENETIC RISK FOR PANCREATIC CANCER.

Danes BS
Lab. for Cell Biology, Dept. Medicine, Cornell Univ. Medical Coll., New York, NY, 10021
Med Hypotheses; 7(9):1113-1116 1981

The identification of in vitro markers in subjects at risk for pancreatic cancer (PC) is discussed. In vitro studies done in several laboratories have demonstrated that monolayer cultures derived from skin biopsies from affecteds and some at-risk members of families with heritable colon cancer syndromes show cellular abnormalities. The association of increased in vitro tetraploidy and a family history of different solid tumors has been observed. Three types of PC have been identified based on family pedigrees: PC with an autosomal dominant inheritance pattern, PC in association with other malignant neoplasms (cancer family syndrome), and PC in association with hereditary pancreatitis. The first two are believed to result from a germinal mutations. In the third case, PC may result as a complication of pancreatitis or as result of gene mutation . It has been proposed that cultured cells derived from an individual having an increased genetic risk for PC should demonstrate this predisposition by culture abnormalities. In one family with PC in two consecutive generations (I and II), 3/8 family members at risk in generation III and 1/3 members studied in generation IV showed increased in vitro tetraploidy. It must be determined if all clinically affecteds show the same in vitro abnormality and if vertical transmission of this marker in the pedigree can be documented. The role of in vitro PC markers in the identification of PC is discussed. (9 Refs)

29. CYTOTOXIC T CELLS IN SMALL INTESTINE EPITHELIAL, LAMINA PROPRIA AND LUNG LYMPHOCYTES.

Davies MD, Parrott DM

Univ. Bacteriology and Immunology, Western Infirmary, Glasgow G11 6NT, Scotland

Immunology; 44(2):367-371 1981

We have examined the development of specific cytotoxic T-cell activity in the lungs and the epithelium and lamina propria of the small intestine following tumor cell inoculation by sc or ip routes. After an ip injection of tumor cells, large amounts of cytotoxic activity are detectable in the lungs and lamina propria. In comparison, the epithelial lymphocytes of the small intestine display low cytotoxic activity. After a sc injection, little cytotoxicity is detectable except in the lungs and the development of such cytotoxicity has a much shorter time course compared with that induced by an ip inoculation of tumor cells. The data indicate a marked difference in the functional capacity of lymphocytes from the epithelium and lamina propria of the small intestine. (Author abstract) (17 Refs)

30. STUDIES ON POSTOPERATIVE CHANGES OF NONSPECIFIC CELL-MEDIATED IMMUNITY IN PATIENTS WITH GASTRIC CANCER.

Yoshino J

Second Dept. Surgery, School Medicine, Mie Univ., Tsu-shi, Mie Prefecture 514, Japan

Nippon Geka Gakkai Zasshi; 82(4):355-367 1981

Postoperative changes of nonspecific cell-mediated immunity were studied in 82 patients with gastric cancer and 17 patients with benign gastric diseases. Among parameters studied preoperatively, lymphocyte count, phytohemagglutinin (PHA) lymphocyte response, and purified protein derivative (PPD) skin test were significantly depressed in the patients with advanced or recurrent carcinoma. No difference of corrected T-cell per cent in lymphocytes was found between normal adults and patients with benign gastric disease or gastric cancer. Lymphocyte count, PHA lymphocyte response, neuraminidase-treated sheep RBC (SRBC) rosette formation cell per cent, T-cell count, PPD and PHA skin tests were markedly depressed 2 wk after the operation and recovered to the preoperative value 2 mo after the operation in all the patients, regardless of the nature of the disease, or extension of tumor. Neither postoperative chemotherapy, nor tumor reduction affected these changes. In the long-term observation, however, depression of lymphocyte count, PHA lymphocyte response, and neuraminidase-treated SRBC rosette formation cellper cent reflected recurrence or exacerbation of tumor. Depression of neuraminidase-treated SRBC rosette formation cell per cent was particularly useful in precognition of recurrence or exacerbation of tumor. (31 Refs) (In JPN)

31. EVALUATION OF POSSIBLE CAUSES OF DELAYED HYPERSENSITIVITY IMPAIRMENT IN CANCER PATIENTS.

Dominioni L, Dionigi R, Dionigi P, Nazari S, Fossati GS, Prati U, Tibaldeschi C, Pavesi F
Istituto de Patologia Chirurgica, Universita de Pavia, 27100 Pavia, Italy
JPEN; 5(4):300-306 1981

The role of tumor growth, malnutrition, and aging as etiologic factors of depres sed delayed hypersensitivity response (DHR) was studied in patients (48 men, 63 women; 20-80 yr old) with solid tumors (20 stomach, 16 colon, 18 rectum, 27 breast, and 30 other cancers). The sex distribution, mean age, and mean serum albumin (SA) levels of the cancer patients and 56 controls (27 men, 29 women; 30-88 yr old) were not significantly different. The controls consisted of nonneoplastic patients, many of whom presented with clinical signs of overt malnutrition, who had been referred to the institute because of their poor general condition and high surgical risk. The mean SA levels of both these cancer patients and controls were significantly lower than the mean serum albumin level of well-nourished, age-matched controls. Significantly depressed values of SA and DHR were recorded in patients with stomach, colon, and rectum cancers. The stage of the tumor was inversely correlated with the SA level. Cancer patients presented a mean DHR that was not significantly different from the DHR of matched controls; however, the DHR of both groups were significantly lower than that of hospitalized patients, less than 50 yr old with minimal nonneoplastic diseases. All anergic cancer patients, except one, had tumors of the gastrointestinal tract and a very low mean SA level. The mean tumor stage of anergic cancer patients was significantly more advanced than in the remaining anergic cancer patients. Regression analysis indicated a significant correlation between the DHR and SA indicating that solid tumors cause malnutrition and that, subsequently, malnutrition causes depression of DHR. (57 Refs)

32. CLUSTER ANALYSIS OF NUTRITIONAL AND IMMUNOLOGICAL INDICATORS FOR IDENTIFICATION OF HIGH RISK SURGICAL PATIENTS.

Nazari S, Comincioli V, Dionigi R, Comodi I, Dionigi P, Capelo A, Bonoldi AP, Bonacasa R, Cozzi M
(c/o R. Dionigi) Istituto de Patologia Chirurgica, Universita di Pavia, 27100 Pavia, Italy
JPEN; 5(4):307-316 1981

The nutritional status of 71 consecutive surgical patients (34 male, 37 female, mean age 54 yr) was studied by cluster analysis in order to identify different nutritional situations and to evaluate their prognostic significance. Twenty-two patients were admitted for minor and benign surgical diseases without any predictable influence on their nutritional status (controls) and 49 for neoplasias, 23 of the gastrointestinal tract and 26 of other organs. In cluster 1, all the parameters were in the normal range except retinol binding protein (RBP) and ceruloplasmin which had higher values; standard triceps skinfold had a lower value. In cluster 2, an important decrease of all parameters except for lymphocytes, complement component C3c, and percentage of usual body wt was seen. Cluster 3 was characterized by a slight and uniform decrease of all parameters except skin tests (normal) and RBP and ceruloplasmin (higher than normal). Major changes were found in cluster 4. Cluster 1 was characterized by the lowest incidence of neoplasia of the gastrointestinal tract, postoperative sepsis, severe surgical trauma, contamination of the operative field, palliative surgical procedures, and mortality in cancer patients. The incidence of cancer, gastrointestinal cancers, postoperative sepsis, and severe surgical trauma progressively increased from cluster 2 through 4. No major differences were observed in distribution of age and sex or tumor stage. (41 Refs)

SURGICAL AND RADIATION THERAPY

33. SQUAMOUS PAPILLOMA OF THE ESOPHAGUS.

Sakai P, Augusto Sorbello A, Ferro Machado R, Ishioka S, Walter Pinotti H, Iriya K, Raia A
Servicio de Endoscopia Gastrointestinal, Hospital das Clinicas da Faculdade de Medicina, Av. Dr. Eneas Carvalho Aguiar, 255, Sao Paulo - Estado de Sao Paulo, Brazil
Rev Esp Enferm Apar Dig; 60(1):27-32 1981

Of the 22,886 esophagogastroduodenoscopies performed, 15 patients (8 men, 7 women; 15-75 yr old) had squamous papillomas that were removed. Of the 15 cases: 4 had associated hiatal hernia, 3 gastritis, 2 duodenal ulcer, and 1 early gastric cancer. One underwent gastrectomy with Billroth II reconstruction. Only three patients did not have any disease of the upper digestive tract. Squamous papillomas were removed endoscopically in pieces with tweezers or completely by thermocauterization, their diameter was 0.3-1.2 cm, no atypical cells were observed. There were no complications. The patients were reexamined 6-24 mo later and no relapses were noticed. Despite other reports considering squamous papilloma as a premalignant lesion, no evidence was found in this study. (14 Refs) (In SPA)

34. SURGICAL THERAPY OF EARLY GASTRIC CARCINOMA.

Trede M, Mennicken C, Bohrer MH, Manegold BC
Chirurgischen Klinik am Klinikum Mannheim, Universitat Heidelberg, Postfach 23, D-6800 Mannheim 1, W. Germany
Zentralbl Chir; 106(15):1005-1015 1981

From January 1970 to September 1980 101 patients with early gastric carcinoma were operated. The youngest patient was 33 yr, the oldest 83 yr old. The incidence was highest in the seventh decade. Two thirds of all early gastric carcinomas were localized in the prepyloric region. Four of these tumors were found in the gastric stump after previous B II resection. Three multifocal carcinomas were found in our series. According to Lauren's classification 70 early gastric carcinomas were of the intestinal type, 28 of the diffuse type, in three cases a correct classification could not be performed. The predominant operative procedure was the B II resection in 71 patients. Further methods were total gastrectomy 15, B I resection 4, proximal resection 4, endoscopic polypectomy 3, Maki-resection 2, local excision 2. In the postoperative period complications occurred in nine patients; four of them died. The 5-yr survival rate was 72%. In four patients a recurrence of the malignancy was detected, in 3 of them another early gastric carcinoma and in 1 an advanced gastric carcinoma. (Author abstract) (21 Refs) (In GER)

35. SURGICAL THERAPY OF ADVANCED GASTRIC CANCER.

Haring R
Chirurgischen Klinik und Poliklinik im Klinikum Steglitz, Freien Universitat Berlin, Hindenburgdamm 30, D-1000 Berlin (West) 45, W. Germany
Zentralbl Chir; 106(15):1016-1024 1981

An aggressive approach has been recommended for the treatment of gastric cancer. Therefore, it is justified to carry out total gastrectomy or upper gastric resection as an ultimate palliation in advanced gastric cancer. Two hundred and fourteen patients with advanced gastric cancer have undergone such a palliative treatment. The results of these patients, including operative mortality, survival rate and quality of life, will be compared with the results of those patients who underwent other kinds of palliation such as gastroenterostomy, esophageal intubation and Witzel fistula. A special designed spiral tube for the treatment of stenosed and inoperable cardiac and esophageal carcinoma will be described. (Author abstract) (10 Refs) (In GER)

36. TOTAL GASTRECTOMY FOR GASTRIC CARCINOMA: A RETROSPECTIVE STUDY OF DIFFERENT PROCEDURES AND ASSESSMENT OF A NEW TECHNIQUE OF GASTRIC RECONSTRUCTION.

Lygidakis NJ
Royal Postgraduate Medical Sch.. Hammersmith Hosp., London W12 OHS, England
Br J Surg; 68(9):649-655 1981

A retrospective study of the value of reconstructive surgery after total gastrectomy for gastric carcinoma in 118 patients who underwent different types of reconstructive procedures is presented. Dissatisfaction with established methods of reconstruction led to the development of a new technique. The new method was associated with less regurgitation, less dumping and functioned as a reservoir without undue delay in emptying time. It was associated with an improved quality of life in the postoperative period, with minimal dumping symptoms, maintenance of wt and the ability to return to work. The mortality and morbidity of the new method are acceptable and it thus offers not only an improved reconstructive procedure for total gastrectomy after resection for gastric cancer, but offers potential for reconstructive surgery after total gastrectomy carried out for other reasons. (Author abstract) (33 Refs)

37. PERSONAL EXPERIENCE OF STOMACH CARCINOMA. ANALYSIS OF 618 CASES.

Giacardi A, Patelli E, Marzocchi D, Meo G
Divisione A di Chirurgia Generale, Ospedale Maggiore di S. Giovanni Battista e della Citta di Torino, Torino, Italy
Minerva Chir; 36(13/14):933-940 1981

In the period 1954-1975, 618/664 patients with gastric neoplasia were treated su rgically. Of these, 55% had distal resection, 26% exploratory laparotomy, 15% palliative surgery, and 3% total gastrectomy. Total mortality was 3.88%, for total gastrectomy 16.66%, and distal gastrectomy 2.64%. Two yr survival was 37.17% for all patients, 62.28% for distal gastrectomy, and 6.44% for total gastrectomy. Five yr survival was 8.09% for all patients, 15.87% for distal resection, and 0% in the total gastrectomy group. Distal gastrectomy should include part of the duodenum and the greater part of the stomach. Anastomosis should be built only with healthy gastric tissue. Results of treatment have not improved over the last few yr. (27 Refs) (In ITA)

38. ENDOSCOPIC POLYPECTOMY IN THE GASTROINTESTINAL TRACT.

Cronstedt J, Carling L, Vestergaard P
Dept. Medicine, Trelleborg Hosp., S-231 00 Trelleborg, Sweden
Acta Med Scand; 210(3):187-192 1981

The results of 160 consecutive fiber-optic endoscopic polypectomies in the gastrointestinal tract are reviewed. Of 22 polyps snared in the upper digestive tract, 16 could be retrieved. One gastric polyp showed early intramucosal carcinoma. Biopsies from a pedunculated ducdenal polyp, which was lost after snaring, revealed adenoma with moderate atypia. Of 138 resected colonic polyps, 132 were retrieved. Of these, 104 (79%) were adenomas. Of 49 colonic adenomas smaller than 10 mm, 4 (8%) showed severe atypia (carcinoma in situ) but none invasive carcinoma. Of 36 adenomas sized 10-19 mm, 8 (22%) showed severe atypia and 1 (3%) invasive carcinoma. of 19 adenomas larger than 20 mm, 6 (32%) showed severe atypia and 1 (5%) invasive carcinoma. Of the colonic polyp patients, 87% had only one or two polyps. Synchronous adenomas and nonneoplastic polyps were found in 6 of 11 cases with three or more colonic polyps. It is concluded that endoscopic polypectomy, carefully and properly performed, is a valuable and promising procedure in the diagnosis and treatment of polyps in the gastrointestinal tract, especially in the large bowel. (Author abstract) (25 Refs)

39. ENDOSCOPICALLY GUIDED PERCUTANEOUS GASTROSTOMY.

Gronbech JE, Thorsen G
Kirurgisk avdeling, Harstad sykehus, 9400 Harstad, Norway
Tidsskr Nor Laegeforen; 101(23):1294-1295 1981

Two elderly patients with dysphagia due to malignant tumors and lymph node metastases were subjected to percutaneous gastrostomy guided by the gastroscope. Gastrostomy was simple and successful in both cases. This method is able to replace conventional gastrostomy and gastric probe for alimentation in most cases. (6 Refs) (In NOR)

40. RADIOLOGICAL EVALUATION OF A NEW METHOD FOR GASTRIC REPLACEMENT BY THE INTERPOSITION OF ISO-ANISOPERISTALTIC JEJUNAL SEGMENT (TUBINGEN SUBSTITUTE STOMACH).

Wolf KJ, Kieninger G
Medizinisches Strahleninstitut, Universitat Tubingen, Rontgenweg 11, D-7400 Tubi ngen, W. Germany
ROEFO; 135(2):169-176 1981

Total gastrectomy followed by gastric replacement by the interposition of iso-anisoperistaltic jejunal segments was performed in 58 patients (23 men and 35 women, av age 59.7 yr) during the period 1972-1980. The indication of total gastrectomy was gastric carcinoma in 50 cases, gastric polyposis and malignant gastric lymphoma in 3 each, and gastric sarcoma and giant ulcer in 1 each. The postoperative mortality was 12%. The results were evaluated radiologically a few wk to 3 yr later. Contrary movements are generated in the isoperistaltic and anisoperistaltic segments. Type I, characterized by to-and-from motion of the food-contrast mixture, resulting in a reservoir function of the isoperistaltic segment and intermittent emptying into the duodenum, was found in 70% of the patients. In type II movements, incomplete local annular contractions can be observed in the isoperistaltic segment, with reservoir function and intermittent emptying. In type III, emptying results from overflow. This latter type was encountered in four cases. (28 Refs) (In GER)

41. CARCINOID IN THE GASTROINTESTINAL TRACT.

Vlasak V, Faltyn J
Surgical Clinic, Medical Faculty Hygiene of Charles Univ., Budecska 36, 120 00 Prague 2, Czechoslovakia
Rozhl Chir; 60(6):422-427 1981

Twenty-three cases of carcinoid of the gastrointestinal tract were diagnosed among 35,743 patients hospitalized during the period 1972-1979. Surgery was performed on 22,276 patients, laparotomy on 14,276, and appendectomy on 3,694. Carcinoid of the appendix was found in 18/23 cases, carcinoid of the small intestine in 5/23. Fourteen of the 18 patients with carcinoid of the appendix were followed up for 1-5 yr. All 14 patients were symptom-free during the follow-up. Carcinoid of the small intestine was diagnosed before surgery in 4/5 cases, on autopsy in one. In agreement with literature data, the findings showed that carcinoid syndrome usually indicate an advanced carcinoid. (21 Refs) (In CZE)

42. SURGICAL TREATMENT OF PRIMARY HEPATOMA - A REPORT ON 117 CASES..

Huang X
Dept. Surgery, Inst. Prevention and Treatment of Hepatic Cancer, Qidong County, Jangsu Prom, People's Republic of China
Zhonghua Zhongliu Zazhi; 3(1):57-60 1981

Results of surgical treatment are reported for 117 cases of primary hepatoma (77 males, 40 females, aged 15-67 yr) seen between 1970 and 1978 and followed for over 1 yr. Postoperative 1-, 2-, 3-, 4-and 5-yr survival rates were 58% (68/117), 44% (41/94), 33.3% (26/78), 25% (11/44) and 26% (5/19) respectively. The operation mortality was 3.47% (4/117) and the resection rate was 49.3%. These results were much better than those reported in the world literature. Therapeutic results were directly related to the extent of resection. Resection of the right-half of the liver was the major cause of postoperative deaths. Surgery combined with postoperative chemotherapy prolonged patient survival. Mass surgery, early diagnosis and early surgical treatment are considered to be the key factors in improving treatment results in primary hepatoma. Palliative surgery and surgical methods to reduce the postoperative occurrence of biliary fistulas are discussed. (4 Refs) (In CHI)

43. SURGICAL TREATMENT OF PANCREATIC CARCINOMA.

Avis FP, Proctor HJ
Dept. Surgery, Univ. North Carolina Sch. Medicine, 428 Burnett-Womack Clinical Sciences Bldg. 229H, Chapel Hill, NC, 27514
South Med J; 74(9):1045-1046 1981

We reviewed 75 patients operated on for carcinoma of the pancreas during the period 1973 to 1978. The role of surgery was examined in terms of contributing toward diagnosis, palliation, and cure. Computerized tomography, ultrasonography, upper gastrointestinal series, and arteriography were used to determine the presence or absence of a pancreatic mass. Arteriography and CT scanning were very helpful. Histologic confirmation was most often provided in conjunction with celiotomy. Endoscopy with cytology and percutaneous needle biopsy was quite specific but was rarely done. Palliative decompression of the biliary tree was done in 63% and biopsy alone in 21%, with a collective morbidity of 20% and a mortality of 3%. Potentially curative resection was done in only 8% with no immediate postoperative deaths. Although pancreaticoduodenectomy will continue to offer the only chance of cure in small numbers of patients, it is evident the present role of surgery is largely for diagnosis and palliation. In view of the mortality and morbidity of operation, increased emphasis should be placed on noninvasive diagnostic tests (CT scan, endoscopy with cytology, and direct needle biopsy). The future role of surgical reduction of the tumor mass in conjunction with adjuvant therapy is at present ill defined. (Author abstract) (5 Refs)

44. RADICAL PANCREATODUODENECTOMY - A PROCEDURE TO BE ABANDONED?

van Heerden JA, McIlrath DC, Dozois RR, Adson MA
Section Gastroenterologic and General Surgery, Mayo Clinic, Rochester, MN
Mayo Clin Proc; 56(10):601-606 1981

Radical pancreatoduodenectomy, or Whipple's procedure, has gradually fallen into disrepute during the past decade. This loss of popularity has resulted from excessive postoperative mortality and morbidity due to inherent technical difficulties, the dismal long-term survival when the procedure is done for adenocarcinoma of the pancreas, and the current enthusiasm for total pancreatectomy. Our objective was to assess the technical aspects of the Whipple procedure as they relate to subsequent morbidity and mortality. Conclusions are drawn from the evaluation of 146 consecutive patients who underwent this procedure between 1970 and 1979 for either benign (10 patients) or malignant (136 patients) diseases of the pancreas and periampullary region. The postoperative mortality was 4.1%. Significant morbidity occurred in 34% of patients, and early reoperation was required in 7.5% of these patients. The median postoperative hospital stay was 19 days. The relatively low postoperative mortality indicates that inherent technical difficulties of the Whipple procedure can be overcome and supports its continued use in carefully selected patients. The persistent high morbidity and the rather poor long-term results following treatment of certain pancreatic malignancies place individual surgical judgment and technical expertise at a premium whenever this classic operation is contemplated. (Author abstract) (14 Refs)

45. PANCREATODUODENAL RESECTION AND TOTAL PANCREATECTOMY - AN INSTITUTIONAL REVIEW.

Cooperman AM, Herter FP, Marboe CA, Helmreich ZV, Perzin KH
Dept. Surgery, Coll. Physicians and Surgeons Columbia Univ., 630 West 168th St., New York, NY, 10032
Surgery; 90(4):707-712 1981

Between 1940 and 1978, 150 major pancreatic resections -92 pancreatoduodenal resections (PDRs) and 58 total pancreatectomies (TPs) - were performed for benign and malignant disease. The majority of resections were for pancreatic cancer (70 patients) and ampullary cancer (40 patients). The overall operative mortality rate for PDR was 14%; it was 26% for TP. After resection for adenocarcinoma of the head of the pancreas, the operative mortality rate was 28% for TP and 15% for PDR. The number of 5-yr survivors after resection for cancer of the head of the pancreas was four (5.7%). Three survived after PDR and one after TP. Of the 42 adenocarcinomas resected by TP, one of the patients had multicentric cancer and two others had carcinoma in situ. TP appears to have no advantage over PDR for cancers of the head of the pancreas from a theoretical or practical standpoint. (Author abstract) (11 Refs)

46. OPERATIVE AND CHEMOTHERAPEUTIC MANAGEMENT OF MALIGNANT GLUCAGON-PRODUCING TUMORS.

Prinz RA, Badrinath K, Banerji M, Sparagana M, Dorsch TR, Lawrence AM
Dept. Surgery, Loyola Univ. Medical Center, 2160 South First Ave., Maywood, IL, 60153
Surgery; 90(4):713-719 1981

Glucagon-producing tumors of the pancreas are among the rarest forms of islet cell tumors. Two patients are described in whom the characteristic dermatitis, glucose intolerance, wt loss, and anemia of the glucagonoma syndrome were due to a metastasizing islet cell carcinoma. In both, removal of the primary tumor with a distal pancreatectomy brought marked relief of all clinical symptoms for 1-and 2-yr periods. Because streptozocin, the usual chemotherapeutic agent for these tumors, is quite toxic and frequently unsuccessful, dimethyltriazenoimidazole carboximide (DTIC) was used for recurrence after operation. The first patient began taking DTIC when his rash reappeared and his immunoreactive glucagon (IRG) level rose to 6,000 pg/ml (normal, less than 200 pg/ml). Within 3 mo, his rash was gone, and IRG level was 75 pg/ml. The second patient developed a neoplastic gastrocolic fistula and was extremely emaciated. With DTIC, the fistula healed, and he gained wt and returned to work. His IRG level has decreased from 2,975 to 200 pg/ml. No side effects were noted during chemotherapy. Temporary palliation of malignant glucagon-producing neoplasms can be achieved by cytoreductive surgery. When the life-threatening symptoms of this syndrome recur, DTIC chemotherapy seems indicated because of its safety and effectiveness. (Author abstract) (13 Refs)

47. DUODENOPANCREATECTOMY. CLINICAL AND SURGICAL CONSIDERATIONS.

Trigo ER, Viaggio JA
Hospital Alvear, Buenos Aires, Argentina
Rev Argent Cir; 40(5):227-232 1981

Since 1970, 33 cases [cancers of the pancreas (23), ampulla (8), and common duct(2)] have been treated by duodenopancreatectomy. Sixteen patients (48.3%) died during the first 30 days, 9 due to causes related to surgery and 7 due to unrelated causes. Another 14 died 2-36 mo later as a result of hepatic insufficiency (6), relapse (5), renal insufficiency (1), hypoglycemic coma (1), and myocardial infarct (1). Two patients are living 8 mo and 11 yr after surgery for pancreatic and ampullary cancer. Radical surgery can be curative in cancers with a slow evolution; increased survival time and a better quality of life are attained by others. Duodenopancreatectomy is not performed more frequently due to difficulty in establishing correct and early diagnosis, low resectability rate, and fear of complications. This procedure would give better results with early surgery and cancer resection in the intraparenchymatous stage, exhaustive exploration during surgery, second intervention for cholestasis of long duration, use of different tactics according to characteristics of the pancreatic stump, ample gastrectomy accompanied by truncal vagotomy, and improvement of surgical and resuscitation techniques. (42 Refs) (In SPA)

48. CARCINOMA OF THE EXTRAHEPATIC BILE DUCTS.

Rodgers CM, Adams JT, Schwartz SI
(c/o Schwartz) Dept. Surgery, Univ. Rochester, 601 Elmwood Ave., Rochester, NY, 14642
Surgery; 90(4):596-601 1981

The records of patients with carcinoma of the extrahepatic bile ducts, including the ampulla of Vater, operated on at the University of Rochester Medical Center between 1960 and 1980 were reviewed. All 47 patients had similar manifestations and laboratory findings; percutaneous transhepatic cholangiography and endoscopic retrograde cholangiopancreatography were the two studies that consistently localized the tumor. Seven of eight patients with carcinoma of the ampulla underwent pancreaticoduodenectomy. At this writing five are alive and well without evidence of recurrence (a mean of 47 mo). Twenty-three tumors were located at or proximal to the confluence of the right and left hepatic ducts; 16 were distal to this point. The six patients with distal lesions that were resected had a mean survival time of 14 mo; the mean survival time was 7 mo for the six patients in whom the operation was restricted to drainage of the proximal duct. Of the group of patients subjected to exploratory surgery and biopsy only, none survived longer than a mo. Resection was carried out in only one patient for a proximal lesion; this patient died 28 mo after the operation. Patients with proximal lesions who underwent drainage procedures lived an av of 7.6 mo. In all groups survival was longer in patients without metastases at the time of operation. The survival time after the resection was significantly longer than that associated with drainage, which suggests a more aggressive approach to these lesions. (Author abstract) (18 Refs)

49. COMPLICATIONS OF TRANSCATHETERAL OCCLUSION OF ABDOMINAL ARTERIES.

Vogel H, Belz J, Bucheler E
Abteilung Rontgendiagnostik, Universitat Hamburg, Martinistr. 52, 2000 Hamburg 20, W. Germany
Roentgenblaetter; 34(9):342-350 1981

Complications of transcatheteral occlusion of abdominal arteries are reviewed. Embolization of the kidney was employed in 548 cases; the indications included renal tumors in 496 cases and pelvic tumors in 19. The embolization was palliative in 169/496 renal tumor patients, preoperative in 327. Flank pains were observed in 74.3-100% of all cases after peripheral occlusions, in 18.9% after central occlusion with Gianturco spiral, and in 0% after central occlusion with balloon catheter. Occlusions of the liver was performed in 40 cases: the indications included primary and secondary liver tumors in 20 cases and carcinoid syndrome in 1. The side-effects and complications included pain in six cases, increase in the hepatic enzyme level and continuing bleeding in three each, and hepatic coma and fever in two cases each. Occlusion was performed for gastric hemorrhage in 41 cases, including in 5 cases of hemorrhage due to gastric carcinoma. The side-effects and complications included continuing or recurrent hemorrhage in five cases, necrosis in four, reflux of the embolus from the right gastric artery into the proper hepatic artery in 1, embolization of the celiac trunk in 1, pain in two, and hypertension and fever in one each. (34 Refs) (In GER)

50. INTRAOPERATIVE RADIOTHERAPY: THE JAPANESE EXPERIENCE.

Abe M, Takahashi M
Dept. Radiology, Faculty Medicine, Kyoto Univ., 606 Kyoto, Japan
Int J Radiat Oncol Biol Phys; 7(7):863-868 1981

Techniques and results of intraoperative radiotherapy (IOR) in 717 cases are reviewed. Gastric cancer was treated in 184 cases with a single radiation dose of 2,800-4,000 rad. Among 110 patients treated with surgery alone, survival rates were 93% for Stage I, 54.5% for Stage II, 36.8% for Stage III, and 0% for Stage IV. Among 84 treated by IOR, 5 yr survival rates were 88.1% for Stage I, 77.6% for Stage II, 44.6% for Stage III, and 19.5% for Stage IV. No serious complications were noted. Pancreatic cancer was treated in 108 cases with doses of 1,500-4,000 rad. Surgery and/or chemotherapy were used in some cases. Fifteen patients are alive, 5 after more than 1 yr. The greatest effect of treatment was relief of pain. Of 59 patients with biliary tract cancer treated with 2,500-4,000 rad in a single dose, 16 are still alive; the longest survival is 18 mo. Of 14 colon cancer cases treated, 5 are alive; one has survived more than 10 yr. IOR was indicated in brain tumors only after recurrence or in cases of glioblastoma. Of 36 patients treated 9 are alive. Bladder cancer was treated in 171 cases. In another series of 116 bladder cancer patients, IOR was followed by fractionated doses of external radiation which were given to prevent heterotropic recurrences in the bladder. Of 51 patients with lung cancer and 5 with mediastinal tumors treated with IOR, 4 and 6 are alive, respectively; 2/9 with mediastinal tumors have survived greater than 5 yr. A single dose of 3,500 rad was used in cases of prostate cancer. Of 26 patients 14 are still alive, 2 more than 5 yr and 3 more than 3 yr. Five of 27 patients with soft tissue sarcomas treated with IOR are alive after 5 yr. (20 Refs)

51. SINGLE HIGH DOSE INTRAOPERATIVE ELECTRONS FOR ADVANCED STAGE PANCREATIC CANCER: PHASE I PILOT STUDY.

Goldson AL, Ashaveri E, Espinoza MC, Roux V, Cornwell E, Rayford L, McLaren M, Nibhanupud R, Mahan A, Taylor HF, Hemphill N, Pearson O

Dept. Radiotherapy, Howard Univ. Hosp., Washington, DC, 20060

Int J Radiat Oncol Biol Phys; 7(7):869-874 1981

Phase I toxicity studies were undertaken with intraoperative radiotherapy (IOR) for unresectable or partially resectable neoplasms of various body cavities and sc soft tissues. Nineteen patients (12 men, 7 women; ages 52-89 yr) with advanced inoperable carcinoma of the pancreas received electron beams with energies of 9, 12, or 15 megaelectron volts, with 80% depth dose distributions of 3 cm, 4 cm, and 5 cm, respectively. There were no postoperative deaths within 30 days and no delayed wound healing. Only one patient developed an intraabdominal infection. Acute minor side effects were nausea, vomiting, and anorexia 1-5 days post-IOR, seen in 8/19 patients. At all doses and vol, transient, mild elevations in glucose and amylase were also seen. Serious acute side reactions occurred in three patients: one patient who died abruptly 6.5 mo post-IOR had a ruptured superior mesenteric artery and a small ulcer on the posterior wall of the duodenum; a second who died 3 mo post-IOR had liver metastases and an ulcer on the posterior wall of the stomach in the region of the original tumor; a third who died suddenly 3 mo post-IOR had stricture of the common bile duct. Autopsies were performed in these 3 patients and in 2 others among 17 who died revealed massive tumor necrosis with a mild fibrous reaction and islands of viable cancer cells. Two patients are alive 5 and 12 mo post-IOR, respectively; median survival among the 19 patients was 5.5 mo. The palliative and curative values of IOR are difficult to determine from this series. Recommendations about optimal dose are given. (15 Refs)

52. IMPLANTATION OF 125I SUPPLEMENTING EXTERNAL RADIATION AS TREATMENT FOR CARCINOMA OF THE PANCREAS.

Senter KL

Dept. Surgery, California Hosp. Medical Center, Los Angeles, CA

Modern Interstitial and Intracavitary Radiation Management. George FW, ed. New York, Masson Publishing USA, Inc., Cancer Management, Vol. 6, 132 pp., 1981.

Experience with 10 patients having pancreatic malignancy who were treated with external and 125I implant radiation is reviewed. In each case either pancreatic tumor was not suitable for resection or the patient chose implantation. Of the 10 cases, 7 were adenocarcinoma, 2 were islet cell carcinoma, and 1 was malignant melanoma. At the time of implant, staging revealed 5 Stage I, 3 Stage II, and 2 Stage III disease. Treatment consisted of external radiation (3,000 rad in 3-4 wk) to the upper abdomen including whole pancreas and regional nodes, 2-4 wk rest, permanent implantation (usually 60-120 seeds of 0.3-0.4 mCi each), 2-3 wk rest, then external radiation to the upper abdomen to 2,000 rad midline dose in 2-3 wk. Streptozotocin was given to the two patients with islet cell carcinoma. All of the seven patients who presented with pain reported relief. No operative death occurred, and complications were limited to prolonged chylous drainage in one patient and adult respiratory distress in another. Five patients remain alive and well 9-30 mo post-implant. Patient deaths included four with adenocarcinoma and one with islet cell carcinoma and occurred 5-14 mo post-implant. Operative exposure of the pancreas following previous biliary tract decompression procedures and external radiation for the purpose of 125I implant therapy appears feasible and attended by minimal morbidity. (9 Refs)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

53. BROAD PHASE II STUDY OF VINDESINE.

Valdivieso M, Bedikian AY, Bodey GP, Freireich EJ

Dept. Developmental Therapeutics, Univ. Texas System Cancer Center, M.D. Anderson Hosp. and Tumor Inst., 6723 Bertner Ave., Houston, TX, 77030

Cancer Treat Rep; 65(9):877-879 1981

A broad Phase II study of vindesine was conducted in 79 adults with advanced malignancies. Most patients had solid tumors, particularly adenocarcinomas (59%), and 67 patients had received prior chemotherapy which included vincristine in 24 patients and vinblastine in one. Depending on tolerance to previous therapy, patients received vindesine at doses of 3-4 mg/m2 administered iv at 2-wk intervals. Objective tumor regressions were seen in 8 of 36 patients (1 complete response, 1 partial response (PR), and 6 minor responses) with colorectal cancer, 1 of 4 patients (PR) with squamous cell cancer of the esophagus, 1 of 4 patients (PR) with malignant melanoma, and 1 of 2 patients (PR) with lymphoma. Five of 11 responding patients had received vincristine previously. Toxic effects were manageable. The results of this study justify in-depth, disease-oriented Phase II evaluations of vindesine, regardless of prior therapy with other vinca alkaloids. (Author abstract) (10 Refs)

54. INITIAL CLINICAL STUDIES OF VINDESINE.

Valdivieso M, Richman S, Burgess AM, Bodey GP, Freireich EJ

Dept. Developmental Therapeutics, Univ. Texas System Cancer Center, M.D. Anderson Hosp. and Tumor Inst., 6723 Bertner Ave., Houston, TX, 77030

Cancer Treat Rep; 65(9):873-875 1981

Vindesine, a newer vinca alkaloid derivative, underwent a Phase I clinical evaluation in 68 humans with advanced, refractory malignancies. Patients received single total doses ranging from 2 to 12.5 mg, repeated every 1-2 wk. Dose-limiting myelosuppressive, gastrointestinal, and neurologic toxic effects were observed at higher doses. They consisted predominantly of neutropenia, constipation leading, on occasion, to paralytic ileus and peripheral neuropathy. Total doses of 7.5-10 mg (equivalent to 4-5 mg/m2) repeated every 2 wk, were well tolerated. There were two partial remissions in patients with acute leukemia and prior vincristine therapy, two minor responses in patients with renal cell carcinoma, one minor response in a patient with squamous cell carcinoma of the esophagus, and one minor response in a patient with squamous cell carcinoma of the lung. Vindesine is well-tolerated by man, although it shares some of the toxic manifestations of vinblastine and vincristine. Its efficacy in some patients who were no longer responsive to vincristine therapy suggests a lack of clinical cross-resistance between these compounds. (Author abstract) (2 Refs)

55. CLINICOPHARMACOLOGICAL DIFFERENCES BETWEEN SELECTIVE AND SUBSELECTIVE INTRAARTERIAL INFUSION CANCER CHEMOTHERAPY FOR ADVANCED GASTROINTESTINAL CANCER.

Miyazaki M, Fujimoto S, Kitsukawa Y, Endo F, Okui K, Hashiba N, Hikosaka T

First Dept. Surgery, Chiba Univ. Sch. Medicine, Chiba, Japan

Gan No Rinsho; 27(11):1339-1343 1981

Selective and subselective arterial and peripheral venous chemotherapy for advanced gastrointestinal carcinoma were compared in seven patients (4 men, 3 women; 46-79 yr old) on the basis of hepatic venous levels of the drug (5-fluorouracil, 5FU). Two patients with gastric cancer, one with gastric cancer and hepatic metastasis, and one with pancreatic cancer were administered the 5FU with subselective ia infusion, and two patients with pancreatic cancer and hepatic metastasis and one with gastric cancer were administered 5FU with selective ia infusion. None of the patients showed high levels of hepatic dysfunction prior to infusion. Hepatic venous blood levels of 5FU delivered for 60 min at a rate of 500 mg/hr were 74.0 uM with selective celiac arterial infusion, 10.2 uM with subselective abdominal aortic infusion, and 9.9 uM with peripheral venous infusion; this was a ratio of 6.8:1.2:1.0. Levels of drug in the peripheral veins decreased according to the route of administration in the order of peripheral venous infusion greater than abdominal aortic infusion greater than abdominal celiac infusion. The selective infusion method was effective in controlling systemic side-effects. (10 Refs) (In JPN)

56. THERAPY OF LOCALLY UNRESECTABLE PANCREATIC CARCINOMA: A RANDOMIZED COMPARISON OF HIGH DOSE (6000 RADS) RADIATION ALONE, MODERATE DOSE RADIATION (4000 RADS + 5-FLUOROURACIL), AND HIGH DOSE RADIATION + 5-FLUOROURACIL.

Moertel CG, Frytak S, Hahn RG, O'Connell MJ, Reitemeier RJ, Rubin J, Schutt AJ, Weiland LH, Childs DS, Holbrook MA, Lavin PT, Livstone E, Spiro H, Knowlton A, Kalser M, Barkin J, Lessner H, Mann-Kaplan R, Ramming K, Douglas HO, Thomas P, Nave H, Bateman J, Lokich J, Brooks J, Chaffey J, Corson JM, Zamcheck N, Novak JW

Mayo Clinic, Rochester, Mn, 55901

Cancer; 48(8):1705-1710 1981

One-hundred-ninety-four eligible and evaluable patients with histologically confirmed locally unresectable adenocarcinoma of the pancreas were randomly assigned to therapy with high-dose (6,000 rads) radiation therapy alone, to moderate-dose (4,000 rads) radiation plus 5-fluorouracil (5-FU), and to high-dose radiation plus 5-FU. Median survival with radiation alone was only 5-1/2 mo from date of diagnosis. Both 5-FU-containing treatment regimens produced a highly significant survival improvement when compared with radiation alone. Forty percent of patients treated with the combined regimens were still living at 1 yr compared with 10% of patients treated with radiation only. Survival differences between 4,000 rads plus 5-FU and 6,000 rads plus 5-FU were not significant with an overall median survival of ten mo. Significant prognostic variables, in addition to treatment, were pretreatment performance status and pretreatment CEA level. (Author abstract) (11 Refs)

SELECTED CLINICAL CORRELATIONS

57. HEMOLYTIC ANEMIA AND CONSUMPTION COAGULOPATHY AS PARANEOPLASTIC SYNDROME IN ADENOCARCINOMA.

Misera R, Fischer JTh, Reimers HJ

Medizinische Klinik und Poliklinik, Universitat Dusseldorf, Morrenstrasse 5, D-4000 Duesseldorf, W. Germany

Med Welt; 32(32/33):1214-1215 1981

Hemolytic anemia and consumption coagulopathy as paraneoplastic syndrome was diagnosed in three patients (two women, 45 and 47 yr old, and a 36-yr-old man) with adenocarcinoma. Bone marrow carcinosis was also found in all three patients. Gastric adenocarcinoma with diffuse metastases to lymph nodes, vertebral column, sternum, and femoral bone marrow was diagnosed on autopsy only in one patient. The second patient developed paraneoplastic syndrome with skeletal metastases and pulmonary carcinomatous lymphangiosis after partial gastrectomy for early muciparous signet-ring-cell adenocarcinoma. Multiple tumor cell clusters corresponding to adenocarcinoma were found in the bone marrow of the third patient. (6 Refs) (In GER)

58. HEPATIC ARTERY OCCLUSION WITH PERFUSION IN THE TREATMENT OF CARCINOID SYNDROME.

Helmer RE, Morettin LB, Costanzi JJ
Div. Hematology-Oncology, Dept. Internal Medicine, Univ. Texas Medical Branch, Galveston, TX, 77550
Oncology; 38(6):361-364 1981

In two patients with the malignant carcinoid syndrome, a Swan-Ganz balloon tip, flow-directed catheter was used to occlude hepatic arterial flow and perfuse hepatic metastases with 5-Fluorouracil. The first patient, symptomatic for 16 mo, was rendered asymptomatic for 14 mo after treatment. The second patient was relieved of severe diarrhea and generalized urticaria, but progression of the cardiac manifestations were unaffected. Symptoms of the carcinoid syndrome are usually the most debilitating aspect of this illness. When more conservative measures cannot alleviate their symptoms, hepatic artery occlusion with chemotherapeutic perfusion of metastases should be considered. (Author abstract) (21 Refs)

59. DIARRHOEA AND REVERSIBLE ENTEROPATHY IN ZOLLINGER-ELLISON SYNDROME.

Kingham JG, Levison DA, Fairclough PD
(c/o Fairclough) Dept. Gastroenterology, St. Bartholomew's Hosp., West Smithfield, London EC1A 7BE, England
Lancet; 2(8247):610-612 1981

The diagnosis of Zollinger-Ellison syndrome was delayed for several yr in two patients who presented with diarrhea and steatorrhea without dyspepsia. Although 5-10% of patients with a gastrinoma are known to present without symptoms of peptic ulceration, these patients were at first believed to have a malabsorption syndrome. Both patients became symptom-free while on H2 antagonists. (Author abstract) (4 Refs)

60. PRIMARY LYMPHOMAS OF THE STOMACH.

Cunsolo A, Zanni E, Scandellari S, Lapilli A, Maldarizzi F, Spangaro M
Istituto di Clinica Chirurgica I, Universita di Bologna, Bologna, Italy
Minerva Chir; 36(13/14):891-898 1981

Between 1960 and 1979, 768 malignant gastric neoplasias were observed and of these 28 (3.7%) were malignant lymphomas. Histologic examination of samples prepared at the time of surgery revealed 19 histiocytic lymphomas, 5 lymphocytic lymphomas, 3 mixed (lymphohistiocytic) lymphomas, and 1 Hodgkin's lymphoma. Av period of incidence was 42-55 yr. Time span between symptoms and diagnosis was 1-36 mo. Of 17 men and 11 women, 20 patients had partial resection, 4 total gastrectomy due to spread and location of neoplastic process, 9 extensive surgery due to invasion of surrounding tissue, and 4 exploratory laparotomy due to inoperable tumors. Histological examination indicated gastric lymph node involvement in 15 cases. After surgery all patients had radiotherapy. Gastric lymphoma had better prognosis than gastric carcinoma. (30 Refs) (In ITA)

61. THE PATHOLOGY OF PRIMARY GASTROINTESTINAL LYMPHOMAS (REPORT NO 10).

MacLennan KA, Bennett MH, Tu A
(c/o G. Hudson) Dept. Oncology, Middlesex Hosp., London, W1, England
Clin Radiol; 32(5):513-518 1981

One hundred and three primary gastrointestinal lymphomas which have at least a 36 mo clinical follow-up period have been studied. The relative frequency of the histological subtypes has been assessed by light microscopy and immunohistochemistry. The effect of the site and the histology upon prognosis has been studied. (Author abstract) (21 Refs)

REHABILITATION ASPECTS

62. INSTRUMENTS FOR TRANSHEPATIC PLACEMENT OF PROSTHESES IN MALIGNANT BILIARY TRACT OCCLUSION.

Hennig K, Franke D, Tomaras K
Chirurgische Abteilung, Stadtisches Krankenhaus, D-7742 St. Georgen/Schwarzwald, W. Germany
Chirurg; 52(9):602-604 1981

Malignant obstruction of the biliary tract can be palliated by insertion of a prosthesis to restore normal bile flow. Use of a new instrument for transhepatic insertion of prostheses is described. The instrument creates a transhepatic tunnel for the prosthesis. Intrahepatic damage is minimized by bougienage. The guide and cannula are inserted into the bile duct in the area of greatest diameter. The procedure is controlled using x-ray observation. The guide is removed and a dilator is inserted. A cutting pod is then passed over the dilator with a twisting motion. Extension pieces may be placed between the dilator and handle. When the cutting pod reaches the bile duct, the cannula and dilator are removed and the prosthesis is inserted. The prosthesis is fixed in place, examined by x-ray, and washed. The extrahepatic end is then inserted into a suitable point in the stomach or small intestine. The instrument has been used in 10 cases. The procedure was stopped twice due to hemorrhage. (2 Refs) (In GER)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

63. LIVER TUMOURS IN PREGNANCY, FOLLOWING PREVIOUS INTAKE OF HORMONAL CONTRACEPTIVES.

Pietsch P, Petermann J, Zipprich B, Schwesinger G, Kagel KO
Universitats-Frauenklinik, Wollweberstr. 1, DDR-2200 Greifswald, E. Germany
Zentralbl Gynaekol; 103(13):772-780 1981

Liver tumors developed in two women during pregnancy which followed discontinuation of hormonal contraception. Liver cell adenoma developed in a secundipara, 24 yr of age, and its rupture during puerperium led to death by bleeding, after surgical intervention had failed. Hepatocellular carcinoma was recorded from a secundipara, 22 yr of age, and surgically treated, following premature delivery. Problems of diagnosis and the need for interdisciplinary cooperation are discussed and compared with literature data. The pathogenesis of liver tumors in the wake of exogenous hormone inflow and in the context of subsequent pregnancy is another topic of discussion. (Author abstract) (33 Refs) (In GER)

64. ESOPHAGEAL CANCER AMONG BLACK MEN IN WASHINGTON, D.C. I. ALCOHOL, TOBACCO, AND OTHER RISK FACTORS.

Pottern LM, Morris LE, Blot WJ, Ziegler RG, Fraumeni JF
Environmental Epidemiology Branch, Div. Cancer Cause and Prevention, NCI, NIH, Public Health Service, U.S. Dept. Health and Human Services, Bethesda, MD, 20205
JNCI; 67(4):777-783 1981

A case-control study involving interviews with the next of kin or close friends of 120 black males who recently died of esophageal cancer and 250 similarly aged black males who died of other causes was undertaken to discover reasons for the exceptionally high mortality from this cancer in Washington, DC The age-adjusted annual death rate in Washington, DC, for nonwhite males, 1970-75, was 28.6/100,000 far higher than the national rate of 12.4/100,000 and the rates in other metropolitan areas of the country. The major factor responsible for the excess was alcoholic beverage consumption, with an estimated 81% of the esophageal cancers attributed to its use; high use of alcoholic beverages was also found among the controls. The relative risk (RR) of esophageal cancer associated with use of alcoholic beverages was 6.4 (95% confidence interval = 2.5, 16.4). The RR increased with amount of ethanol consumed and was highest among drinkers of hard liquor, although the risk was also elevated among consumers of wine and/or beer only. The RR associated with cigarette smoking was 1.9 (1.0, 3.5) when controls with smoking-related causes of death were excluded but declined to 1.5 (0.7, 3.0) when adjusted for ethanol consumption. Significant differences of approx twofold were found between low and high levels of (a) consumption of fresh or frozen meat and fish, fruits and vegetables, and dairy products and eggs and (b) relative wt (wt/ht2). The inverse trends with these general measures of nutritional status were not explained by alcoholic beverage consumption of socioeconomic status as measured by educational level. (Author abstract) (23 Refs)

65. CARCINOGENIC FACTORS OF HEAD AND NECK CANCER (PART 1) - CLINICAL STUDY OF THE INFLUENCE OF SMOKING AND DRINKING.

Miyahara H
Dept. Otolaryngology, Center for Adult Diseases, 1-3-3 Nakadori, Higashinari-ku, Osaka, Japan
Nippon Jibiinkoka Gakkai Kaiho; 84(1):47-53 1981

Cigarette smoking and alcohol drinking histories of 140 patients (100 men, 40 women; 17-84 yr old) with malignant tumors were investigated. Sites of the tumors were the larynx in 44 patients, oral cavity in 34, pharynx in 29, tonsils or nasal cavity in 18, and thyroid in 15. Based on the strengths of the alcohols investigated (beer, Japanese sake, whiskey, shochu, wine, and vodka), a Shochu index was calculated (amount of shochu equivalent/day x number of yr drinking) for each patient, and the Brinkman index was used to indicate each patient's consumption of tobacco. Compared to the patients in other cancer groups, the patients with laryngeal cancer had high Brinkman indices (most were greater than 1,000) and Shochu indices (half were greater than 30). Tobacco smoking was the highest risk factor in laryngeal cancer, and the risk was markedly multiplied by alcohol consumption in supraglottic cancer. Drinking and smoking influenced the development of mesopharyngeal and piriform sinus cancers, and drinking influenced development of tongue and oral floor cancers, especially in men. Heavy smoking and drinking were believed to be high risk factors in development of head and neck cancers. (19 Refs) (In JPN)

66. CARCINOGENIC FACTORS IN MALIGNANT TUMORS OF THE HEAD AND NECK (PART 2) - INVESTIGATION OF ALCOHOLISM IN PATIENTS.

Miyahara H, Sato T
Dept. Head and Neck Surgery, Center for Adult Diseases, 1-3-3 Nakamichi, Higashinari-ku, Osaka 537, Japan
Nippon Jibiinkoka Gakkai Kaiho; 84(2):146-153 1981

Twelve male patients, 49-75 yr old, who were alcoholics and had malignant tumors of the head and neck were studied. The tumors were in the mesopharynx in five patients, in the oral cavity in four, in the larynx in three, in the esophagus in two, in the hypopharynx in one, and in the parotid gland in one; four of the patients were thought to have multiple tumors. Eight of the patients had Stage III tumors, and one had a Stage IV tumor. Of the 12 patients, 8 died of cancer within 1 yr of treatment. All patients smoked tobacco, and consumption of tobacco was assessed by Brinkman's index: the lowest value was 400, and the highest was 2,200. With respect to alcohol consumption, patients from the Kumamoto area primarily drank shochu, with the lowest consumption being greater than 3.6 liters/day for greater than 20 yr. Four patients had been repeatedly admitted to the hospital due to alcohol poisoning. One of the patients with lower pharyngeal and esophageal cancer drank 0.5-1 bottle of whiskey/day and smoked 100 cigarettes/day. Complications associated with alcoholic damage included gastritis, gastric ulcers, hepatitis, hepatic cirrhosis, diabetes, and hypertension. Nine patients showed no skin response to dinitrochlorobenzene. Results suggested that heavy drinking and smoking are carcinogenic. (8 Refs) (In JPN)

67. THE RELATIONSHIP BETWEEN WATER QUALITY AND HEALTH IN THE LONDON AREA.

Beresford SA
Dept. Clinical Epidemiology and General Practice, Royal Free Hosp. Sch. Medicine, Pond St., London NW3 2QG, England
Int J Epidemiol; 10(2):103-115 1981

In a retrospective study of the relationship between reuse of water and hazards to health, the mortality experience from different causes, principally cancer, was examined for 29 boroughs and districts in the London area for the period 1968 to 1974. Information concerning the source of water supply to each borough was obtained both for the current situation, and historically back to 1926. Socioeconomic characteristics of the boroughs were extracted from 1971 census data. Differential mortality experiences for each sex were analyzed using the standardized mortality ratio for ages 25 to 74. Most of the causes of death examined were associated with one or more of the socioeconomic characteristics of the boroughs. These socioeconomic characteristics accounted for the statistical associations between water reuse and mortality for each cause studied, except male stomach cancer, where a weak residual association remained. This association disappeared when variation in the size of boroughs was taken in to account. (Author abstract) (34 Refs)

68. THE RELATIONSHIP BETWEEN MALIGNANCY AND FLUORINE CONTENT IN THE DRINKING WATER IN XILINKUOLEMENG, NEI MENGGU..

A L, Wang B
Bureau of Public Health, Xilinkuolemeng, People's Republic of China
Zhonghua Zhongliu Zazhi; 3(1):19-21 1981

Increased cancer mortality rates have been attributed to fluorine in drinking water. The relationship between malignancy and fluorine content in the drinking water of the Xilinkuolemeng district in northeastern Inner Mongolia is described. The fluorine contents in the drinking water of 10 countries within this distinct were determined and were found to range between 1.10 mg/l and 5.33 mg/l in 8 countries which exceeded the government limits of 0.5-1.0 mg/l. When the cancer mortality rates of the countries in this distinct were compared, a positive correlation was observed between fluoride content and cancer mortality rates, especially those of gastric, esophageal and brain cancer, in this district. In is concluded that high-fluorine content in the drinking water of Xilinkuolemeng may be one of the etiologic factions that contribute to the high incidence of certain malignant tumors in this district. (3 Refs) (In CHI)

69. NUTRITIONAL MODULATION OF CANCER.

Nauss KM, Newberne PM
Dept. Nutrition and Food Science, Massachusetts Inst. Technology, Cambridge, MA, 02139
Cancer Detect Prev; 3(2):367-417 1981

A review is made of (1) specific target organs where epidemiologic and experimental animal data indicate a role for nutrition in tumor development, (2) the role of certain vitamins, especially vitamin A and ascorbic acid, in modulation of cancer, and (3) experimental evidence for a nutritional role in the modification of carcinogen metabolism and the host immune response. Nutritional deficiencies are etiologic factors in esophageal and gastric cancer, malnutrition and dietary carcinogens etiologic factors in liver cancer, and dietary fats etiologic factors in colon cancer. Dietary components that inhibit the metabolic activation of carcinogens include flavones, indoles, and antioxidants. Vitamin A and its synthetic analogs are effective inhibitors of carcinogen-induced epithelial neoplasms; they also enhance cellular immunity and antitumor response. (140 Refs)

70. A NOTE ON THE ROLE OF DIETARY RETINOL AND CAROTENE IN HUMAN GASTROINTESTINAL CANCER.

Modan B, Cuckle H, Lubin F
Dept. Clinical Epidemiology, Chaim Sheba Medical Center, Tel Hashomer and Tel Aviv Univ. Medical Sch., Tel Aviv, Israel
Int J Cancer; 28(4):421-424 1981

Dietary data relating to 406 patients with gastrointestinal cancers (cases) and 812 controls have been analyzed to test the hypotheses that dietary vitamin A (retinol) and its precursor, carotene, may be protective agents in human carcinogenesis. There was no deficit among cases in the intake of retinol-containing food items whereas several of the main carotene-containing fruits and vegetables were eaten less often among cases than among controls. However, when total daily intake was estimated, there was no protective effect of carotene, perhaps implying that some other constituent of the fruits and vegetables is protective. (Author abstract) (11 Refs)

71. PHENOXY ACIDS, CHLOROPHENOLS, AND CANCER.

Hardell L, Eriksson M
Onkologiska kliniken, Regionsjukhuset, Umea, Sweden
Lakartidningen; 78(34):2862-2863 1981

Recent studies on the carcinogenic effects of phenoxy acids and chlorophenols in occupationally exposed subjects are reviewed. Relationship between exposure to phenoxy acids and chlorophenols and malignant mesenchymal soft-tissue tumors was found in two case-control studies in Sweden. Increased risk of malignant lymphoma was also demonstrated in another study. Malignant lymphoma, acute leukemia, and malignant mesenchymal soft-tissue tumors were found at significantly increased incidence among workers exposed to (2,4,5-trichlorophenoxy)acetic acid 2,4,5-trichlorophenol, and the impurity 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD). TCDD was found to induce malignant mesenchymal soft-tissue tumors, and 2,4,6-trichlorophenol caused increased incidence of hepatocellular carcinoma, malignant lymphoma, and leukemia in rats. (15 Refs) (In SWE)

72. CANCER RISK IN PESTICIDE-EXPOSED AGRICULTURAL WORKERS.

Barthel E
Bezirksfachkrankenhaus fur Lungenkrankheiten und Tuberkulose, Amsee 1, DDR-2060 Waren (Muritz), E. Germany
Arch Geschwulstforsch; 51(7):579-585 1981

Cancer risk was studied in 1,658 agricultural workers who had been exposed to pesticides for at least 5 yr in a cohort study. Malignant tumors were found in 169/1,658 cases; the tumors were confirmed histologically in 124/169 cases. Tumors of the esophagus, nasal cavity, soft tissues, lymphoid tissue, skin melanoma, lymphosarcoma, and lymphocytic leukemia were diagnosed in 1 case each. Other tumors included stomach in 21 cases, rectum in 7, liver in 2, gallbladder in 2, pancreas in 7, larynx in 4, trachea, bronchi, and lungs in 59, skin in 19, prostate in 11, penis in 2, urinary bladder in 7, brain in 2, and thyroid gland in 2. Lymphogranulomatosis was diagnosed in two cases, plasmocytoma in three, and myeloid leukemia in two. The difference between the exposed group and general epidemiological data was significant for lung cancer only (50 cases among exposed patients from 1970-1978 versus an expected value of 27.5). The av length of exposure of the lung cancer patients was 13.6 yr (6-23 yr), and the av latent period was 17.5 yr (6-29 yr). The higher incidence was not related to smoking habits, which suggests the etiological role of pesticide exposure. Based on intraindividual exposure data, experimental data, and on the use of pesticides in East Germany, the pesticides of greatest concern are arsenic-containing compounds, dicophane (DDT), lindane, and phenoxy acids. (21 Refs) (In GER)

73. MORTALITY AMONG RUBBER WORKERS. III. CAUSE-SPECIFIC MORTALITY, 1940-1978.

Delzell E, Monson RR
Dept. Epidemiology, Harvard Sch. Public Health, 677 Huntington Ave., Boston, MA, 02115
JOM; 23(10):677-684 1981

This report describes mortality occurring between 1940 and mid-1978 among 29,087 men and women employed in a rubber plant for at least 2 yr. Mortality patterns for the period July 1, 1974, to July 1, 1978, were compared to previously published findings for January 1, 1940, through June 30, 1974. Expected numbers of deaths were based on U.S. general population mortality data. There were excess deaths from bladder cancer and leukemia among white male union members during both follow-up periods. During recent follow-up of white male union members employed for at least 5 yr, there were excesses in deaths from three additional cancers: esophageal cancer (11 observed/4.8 expected), biliary and liver cancer (6 observed/3.3 expected) and lymphoma and multiple myeloma (14 observed/5.8 expected). Evidence from other studies of rubber workers suggests that observed excesses in deaths from bladder cancer and leukemia are related to workplace exposures. The present findings suggest that occupational exposures etiologically relevant to these diseases may not have been reduced in recent yr or that sufficient time has not elapsed for such reductions to result in decreased mortality. Further investigation is required to clarify the contribution of occupational factors to observed excesses in deaths from cancers of the esophagus and the biliary passages and liver and from lymphoma and multiple myeloma. (Author abstract) (26 Refs)

74. ATLAS OF CANCER MORTALITY IN THE PEOPLE'S REPUBLIC OF CHINA. AN AID FOR CANCER CONTROL AND RESEARCH.

Li JY, Liu BQ, Li GY, Chen ZJ, Sun XD, Rong SD
Dept. Cancer Epidemiology, Cancer Inst. Chinese Acad. Medical Sciences, 2, Yabao Lu, Chaoyang, Qu, Beijing, People's Republic of China
Int J Epidemiol; 10(2):127-133 1981

A set of maps which display the patterns of cancer mortality in China has been prepared and published by the China Map Press. The 200 page atlas was edited by the National Cancer Control Office of the Ministry of Health and the Nanjing Institute of Geography of the Chinese Academy of Sciences on the basis of a nation-wide cancer mortality survey. The Cancer Institute of the Chinese Academy of Medical Sciences with related Colleges, Universities and Institutes provided the data and took part in the preparation of the atlas, which is published both in Chinese and English. Fifty eight maps and several dozen charts depict, in seven colors, the mortality distribution in the 2,392 counties and county-level administrative units of nine types of cancer common in China - stomach, esophagus, liver, cervix, lung, colon and rectum, breast, nasopharynx, and leukemia as well as five less common cancers - brain tumors, malignant lymphoma, cancer of the bladder, of the penis, and choriocarcinoma. The Atlas of Cancer Mortality will be an important new aid for cancer control and research in the People's Republic of China. (Author abstract) (10 Refs)

SELECTED PRE-CLINICAL STUDIES

75. IN VITRO SCREENING OF ANTITUMOR DRUGS USING THE CAES-17 CELL LINE - PRELIMINARY OBSERVATIONS.

Rong G, Gu Y, Wang S, Zhu Y
Tumor Res. Unit, Affiliated People's Hosp., Beijing Medical Coll., Beijing, People's Republic of China
Zhonghua Zhongliu Zazhi; 3(1):77 1981

Preliminary results are described for using a cell line derived from a squamous carcinoma of the esophagus (CaEs-17) in the in vitro screening of antitumor drugs. Numerous antitumor agents were tested, including zhengguangmycins, phytohemagglutinins and Chinese traditional drugs. It was found that the in vitro method using CaEs-17 cell line was simple, economical and rapid. Preliminary observations showed that results with some drugs (eg zhengguangmycins and pingyangmycins) in this in vitro test were the same as those observed in vivo. (no Refs) (In CHI)

76. DAMAGE AND RECOVERY OF ESOPHAGEAL CARCINOMA CELLS (ECA 109) IN VITRO AFTER HYPERTHERMIC TREATMENT.

Pan Q
Dept. Cell Biology, Chinese Acad. Medical Sciences, Cancer Inst., Beijing, People's Republic of China
Acta Anat Sin; 12(2):179-186 1981

The effects of in vitro heat treatment are described for the cell line ECA 109. Cultured cells were subjected to 42.5 C or 44.5 C for 30 min or 60 min and returned to continuous cultivation at 37 C for 10-15 days. After treatment at 44.5 C for 30 min and 42.5 C for 60 min, the cells had similar growth curves; the number of cells in both cases after 2 wk decreased to about one-third the number immediately after heating. Fifteen days after heat treatment at 42.5 C for 30 min the cell number was 1.5 times the number immediately after heating, as compared to 3.5 times for the untreated control. Treatment at 44.5 C for 30 min had marked effects on cell division, lowering the mitotic index and producing many abnormal divisions. The nucleoli became obscure and their silver-staining granules indistinct immediately after heating but gradually recovered 1 day after returning to normal culture conditions. Half-hr after heating, 3H-thymidine incorporation was completely inhibited which began to recover 1.5 hr later. In heat-treated cells, 3H-uridine incorporation was partially inhibited and the transport of RNA from nucleus to cytoplasm was affected. The incorporation of both nucleosides returned to control levels 48 hr after heat treatment. (17 Refs) (In CHI)

77. EXPLANT CULTURE OF RAT ESOPHAGUS IN A CHEMICALLY DEFINED MEDIUM.

Stoner GD, Pettis W, Haugen A, Jackson F, Harris CC
Dept. Pathology, Medical Coll. Ohio, C.S. 10008, Toledo, OH, 43614
In Vitro; 17(8):681-688 1981

Esophagus from adult male CDF rats was cultured for a period of 28 days in CMRL-1066 medium supplemented with pyruvic acid, HEPES buffer, beta-retinyl acetate, and antibiotics. Morphological, radioautographic, and biochemical studies indicated that the survival of the tissue in serum-free medium was equivalent to that in medium containing 5% heat-inactivated fetal bovine serum. There was a relatively constant uptake of [3H]thymidine into DNA and [3H]leucine into protein of the esophageal explants during the incubation. Only the basal cells of the epithelium incorporated [3H]thymidine into their nuclei. The normal morphology of the tissue was preserved when the explants were maintained at both 37 and 30 C, and in either 50 or 20% O2. Ninety-five percent O2 was highly toxic to the cells of the explants. This culture system should be suitable for a variety of investigations in esophageal cell differentiation and carcinogenesis. (Author abstract) (27 Refs)

78. SUPPRESSIVE EFFECT OF SUPERNATANT OF MIXED LYMPHOCYTE TUMOR CELL CULTURES (MLTC) ON THE GROWTH OF HUMAN GASTRIC CARCINOMA TRANSPLANTED IN NUDE MICE.

Matsumoto S
Dept. Surgery, Sch. Medicine, Keio Univ., Shinjuku-ku, Tokyo 160, Japan
Nippon Geka Gakkai Zasshi; 82(4):305-315 1981

Human gastric carcinomas, KSt-1 and St-15, which had been maintained in nude mice, were used as human tumors, and the effect of human lymphocytes on the tumor growth was examined. The growth of St-15 in nude mice was temporarily inhibited by injection of human lymphocytes sensitized in MLTC but not by nonsensitized ones. Injection of supernatant of MLTC to tumor-bearing nude mice suppressed the tumor growth markedly. Spleen cells of nude mice injected with MLTC-supernatant showed significantly increased natural killer (NK) activity, as determined by 51Cr-release assay on YAC, and increased macrophage activity, as determined by inhibition of 3H-thymidine uptake by H-2 syngeneic P-815. These results indicate that human lymphocytes sensitized to tumor may recognize allogenic human lymphocyte antigen on tumor cells and temporarily inhibit the tumor growth, and that MLTC-supernatant activates NK cells as well as macrophages in tumor-bearing nude mice and these activated cells prevent the tumor growth. (39 Refs) (In JPN)

79. EFFECT OF SOME FATTY ACID METHYL ESTERS ON GASTROINTESTINAL CARCINOGENESIS BY N-METHYL-N'-NITRO-N-NITROSOGUANIDINE IN RATS.

Arffmann EJ, Rasmussen KS, Hansen FN
Dept. Pathology, Aalborg Hosp., P.O. Box 561, DK-9100 Aalborg, Denmark
JNCI; 67(5):1071-1075 1981

Methyl linoleate hydroperoxide (MLHP) and native methyl linoleate (ML) were tested for carcinogenicity toward the gastrointestinal (GI) tract in male specific-pathogen-free outbred Wistar rats N-Methyl-N'-nitro-N-nitrosoguanidine (MNNG) was given in the drinking water in a dose of 20 mg/liter when cocarcinogenic properties of the test substances were to be tested. MLHP and ML were fed by stomach tube and had no effect as complete carcinogens. Given concomitantly with MNNG, ML did not enhance carcinogenesis. MLHP in conjunction with MNNG was the only treatment which, as treatment with MNNG in a dose of 83 mg/liter, led to an increase of GI cancers in animals that died before day 354. Cumulative results after a max of 612 days showed a distribution of GI cancers in favor of the glandular stomach only after MLHP was given with MNNG. (Author abstract) (24 Refs)

80. ASCORBIC ACID AND CANCER OF THE DUODENUM. AN EXPERIMENTAL STUDY.

Werner B, Denzer U, Mitschke H, Brassow F
Abteilung fur Allgemeinchirurgie, Universitat, Martinistrasse 52, D-2000 Hamburg 20, W. Germany
Langenbecks Arch Chir; 354(2):101-109 1981

The effect of vitamin C (administered po as sodium ascorbate, 2-3% in feed) on carcinoma of the small intestine induced by N-ethyl-N'-nitro-N-nitrosoguanidine (ENNG: 120 mg/liter in drinking water) was studied in male Wistar rats. Group I was treated with ENNG only, Group II with ENNG and vitamin C simultaneously, and Group III with vitamin C only. The duration of each experiment was 18 wk. The number of tumor-bearing animals was 33/36 in Group I, 32/35 in Group II, and 0/10 in Group III. The total number of tumors was 156 in Group I and 136 in Group II. Gastric tumors were found in one animal in Group I and in three in Group II. The number of suprapapillary duodenal tumors was 88 in Group I and 96 in Group II, that of intrapapillary duodenal tumors 62 in Group I and 37 in Group II. Five jejunal tumors were found in Group I. Adenoma and borderline lesions were found in 4/36 animals in Group I and in 8/35 in Group II. The depth of carcinoma infiltration corresponded to Stage P2 in 1/36 animals in Group I and in 8/35 in Group II, to Stage P3 in 3/36 and 3/35 animals in Groups I and I respectively, and to P4 in 25/36 animals in Group I and in 13/35 animals in Group II. The findings indicate that vitamin C did not suppress tumor induction, but caused a change in the distribution of the small intestinal tumors according to localization, and a significant reduction (p less than 0.005) in the frequency of Stage P4. (20 Refs) (In GER)

81. CHARACTERIZATION OF THE ASIALOGLYCOPROTEIN RECEPTOR IN A CONTINUOUS HEPATOMA LINE.

Schwartz AL, Fridovich SE, Knowles BB, Lodish HF
Biology Dept., Massachusetts Inst. Technology, Cambridge, MA, 02139
J Biol Chem; 256(17):8878-8881 1981

The asialoglycoprotein receptor has been identified on a continuous human hepatoma cell line, HepG2. This receptor requires Ca++ for ligand binding and is specific for asialoglycoprotein. There are approx 150,000 ligand molecules bound/cell at 4 C. These receptors represent a homogeneous population of high affinity binding sites with Kd = 7 x 10(-9) M. From the rate of 125I-ASOR binding at 4 C, kon was 0.95 x 10(6) M-1 min-1. Uptake of 125I-ASOR at 37 C was approx 0.02 pmol/min/10(6) cells. (Author abstract) (22 Refs)

82. BIOSYNTHESIS AND HORMONE-REGULATED EXPRESSION OF SECRETORY GLYCOPROTEINS IN RAT LIVER AND HEPATOMA CELLS. EFFECT OF GLUCOCORTICOIDS AND INFLAMMATION.

Baumann H, Held WA
Dept. Cell and Tumor Biology, Roswell Park Memorial Inst., Buffalo, NY, 14263
J Biol Chem; 256(19):10145-10155 1981

Exposure of rat hepatoma tissue culture cells to dexamethasone results in appearance of a new glycoprotein, gp35-50 (Mr = 35,000 to 50,000) and increased synthesis of another glycoprotein, gp50 (Mr = 50,000). The glycoproteins synthesized in a fractionated cell-free translation system (containing dog pancreas microsomes) appear as a well separated series of spots on two-dimensional polyacrylamide gels which differ in size and charge. Glycoproteins synthesized by glucose-starved cells show similar size and charge heterogeneity. The size heterogeneity consists of a series of spots, each differing in mol wt by about 3,000, which could be almost completely abolished by treatment with endo-beta-N-acetylglucosaminidase H. Our results indicate that unglycosylated gp50 (Mr = 42,000) typically acquires three N-glycan units, whereas gp35-50 (Mr = 22,000) possesses eight N-glycosylation sites. Analysis of the cell-free translation products directed by mRNA from hepatoma tissue culture cells grown in tissue culture, from hepatoma tissue, and from normal liver tissue indicated that administration of dexamethasone causes a pronounced increase in gp35-50 mRNA in all three tissues. A similar increase was observed in liver after inflammation which along with other biochemical properties suggests that gp35-50 may be alpha1-acid protein. In contrast, mRNA coding for gp50 was not increased by dexamethasone in tumor tissue and no protein structurally related to gp50 was detected in the liver mRNA translation products. Thus, gp35-50 is expressed in normal liver, whereas gp50 is expressed in hepatoma cells and is differentially regulated by steroid hormones depending on whether the cells are grown in tissue culture or as a tumor in the rat. (Author abstract) (53 Refs)

83. BETA-NAPHTHYLISOTHIOCYANATE-INDUCED ALTERATIONS IN HEPATIC DRUG METABOLISM AND LIVER MORPHOLOGY.

Leonard TB, Popp JA, Graichen ME, Dent JG
Chemical Industry Inst. Technology, P.O. Box 12137, Research Triangle Park, NC, 27709
Toxicol Appl Pharmacol; 60(3):527-534 1981

The effects of continuous feeding with beta-naphthylisothiocyanate (BNIT: 0.022%, 0.047%, or 0.1% of diet for 4 wk) on liver histology and hepatic enzymes were studied in male Charles River F-344 rats. Rats fed 0.1% BNIT developed multifocal granulomatous inflammatory lesions, but the lesions did not alter SGPT or serum bilirubin levels. BNIT treatment resulted in a dose-dependent increase in hepatic cytochrome P-450, benzphetamine-N-demethylase, and ethoxycoumarin-O-deethylase activity. BNIT also stimulated DT-diaphorase activity, but it did not alter epoxide hydrolase activity assayed with benzo(a)pyrene-4,5-oxide or styrene oxide as substrates. These effects contrast markedly with those of alpha-naphtylisotiocyanate. which also inhibits chemically induced hepatocarcinogenesis. Stimulation of mixed-function oxidases and DT-diaphorase may be a factor in the anticarcinogenic action of BNIT. (36 Refs)

84. INHIBITION OF CELL CYCLE PROGRESSION OF HUMAN PANCREATIC CARCINOMA CELLS IN VITRO BY L-(ALPHAS,5S)-ALPHA-AMINO-3-CHLORO-4,5-DIHYDRO-5 ISOXAZOLEACETIC ACID, ACIVICIN (NSC 163501).

Meck RA, Clubb KJ, Allen LM, Yunis AA
Inst. Cell Analysis, Dept. Oncology, Univ. Miami Sch. Medicine, Miami, FL, 33101
Cancer Res; 41(11,part1):4547-4553 1981

The inhibition of cell cycle progression of a human pancreatic carcinoma line, M iaPaCa-2, by L-(alphaS,5S)-alpha-amino-3-chloro-4,5-dihydro-5 isoxazoleacetic acid (Acivicin), an antimetabolite and glutamine antagonist, was investigated by means of flow cytometry, cell cycle kinetics, and cell enumeration. Flow cytometric criteria for logarithmically growing MiaPaCa-2 cells were established. Logarithmically growing cells exposed to 50 uM Acivicin appeared to markedly reduce their rate of cell cycle progression after they passed a point in later G1 phase of in early S phase. MiaPaCa-2 cells grew in the presence of 50 uM Acivicin with a population-doubling time of approx 74 hr compared to a 20-hr doubling time for controls. The inhibition of cell cycle progression was at least partially reversed by removal of the drug. Based on previous reports of the biochemical mechanisms of Acivicin actions, several additives to the tissue culture medium were tested for their ability to protect MiaPaCa-2 cells from inhibition of cell cycle progression. Those cultures which contained cytidine partially protected the cells from Acivicin. The mechanisms of inhibited growth induced by exposure to Acivicin is likely a complex reaction to the inhibition of several enzyme systems. (Author abstract) (20 Refs)

85. LONG-TERM ISOGRAFTS OF CULTURED FETAL MOUSE PANCREATIC ISLETS. THE ONCOGENIC EFFECTS OF STREPTOZOTOCIN AND THE PREVENTION OF DIABETIC RENAL COMPLICATIONS.

Mandel TE, Hoffman L, Carter WM
Walter and Eliza Hall Inst. Medical Res., Post Office Royal Melbourne Hosp., Victoria, 3050, Australia
Am J Pathol; 104(3):227-236 1981

Female CBA mice made diabetic with a single iv dose of streptozotocin (STZ) were either grafted with cultured fetal mouse pancreatic islets onto the splenic capsule, treated with insulin, or left untreated. An age- and sex-matched group of nondiabetic mice served as normal controls. All islet-grafted and most insulin-treated mice survived and had normal fasting blood glucose levels. By contrast, of the untreated diabetic mice, one died and the survivors showed poor wt gain. Light-microscopic examination of the islet isografts showed a progressive increase in graft size and beta-cell granulation over the 9-mo study period. Quantitative electron-microscopic examination of the kidney showed that, whereas the islet-grafted and nondiabetic control mice had similar glomerular capillary basement membrane (GCBM) thickness, the untreated diabetic and insulin-treated mice had markedly thickened GCBM. All STZ-treated mice developed diffuse hepatic dysplasia and, at later time points, some showed biliary hyperplasia, intrahepatic cysts, and occasionally nodular dysplasia. With increasing time after STZ, most mice developed renal adenomas. One untreated diabetic mouse also developed a solitary functional pancreatic beta-cell adenoma. STZ effects were not affected by treatment of diabetes. (Author abstract) (46 Refs)

86. SEX DIFFERENCES IN THE EFFECTS OF RETINOIDS ON CARCINOGENESIS BY N-NITROSOBIS(2-OXOPROPYL)AMINE IN SYRIAN HAMSTERS.

Birt DF, Sayed S, Davies MH, Pour P
Eppley Inst. for Res. in Cancer, Univ. Nebraska Medical Center, 42nd and Dewey Ave., Omaha, NE, 68105
Cancer Lett; 14(1):13-21 1981

Male and female Syrian hamsters received a single dose of N-nitrosobis(2-oxopropyl)amine (BOP: 40 mg/kg, sc) and 1 wk later were fed one of four retinoid types (13-cis retinoic acid (13-cis-RA), N-ethylretinamide (ERA), 2-hydroxy-ethylretinamide (OH-ERA), or 4-hydroxyphenylretinamide (PRA)) each at three dose levels reported as 0.05, 0.1, and 0.2 milliM/kg diet. The wt of the pancreas was influenced by the sex and retinoid level: wt increased in females fed the high retinoid level and decreased in males fed the 0.1 milliM level. Nearly all animals developed pancreatic adenomas. The av number of adenomas was reduced in female hamsters fed retinoids. The greatest decrease occurred with 13-cis-RA (48% reduction), with reductions intermediate for ERA and OH-ERA (39%), and smallest for PRA (14%). In male hamsters, pancreatic adenoma incidence was not influenced by retinoid treatment; however, the multiplicity of these lesions in males fed OH-ERA and PRA was greater than those fed 13-cis-RA, ERA, or control diet. The pancreatic carcinoma incidence was not influenced by retinoids, although female hamsters fed 13-cis-RA developed fewer carcinomas per animal than did animals fed ERA. In female, but not male, hamsters, the liver tumor incidence was reduced from 60% to 21% by feeding OH-ERA, and the gallbladder tumor incidence from 60% to less than 10% in females fed 13-cis-ERA and ERA. These results suggest that sex hormones or other sex differences may influence the factors which determine the ability of retinoids to inhibit carcinogenesis. (33 Refs)

87. DIFFERENCES IN EXPERIMENTAL PANCREATIC CARCINOGENESIS INDUCED BY ORAL OR SUBCUTANEOUS ADMINISTRATION OF 2,2'-DIHYDROXYDI-N-PROPYLNITROSAMINE IN DUCT-LIGATED HAMSTERS.

Ruckert K, Pracht B, Kloppel G

Dept. Surgery, Univ. Mainz, Langenbeckstrasse 1, D-6500 Mainz, W. Germany

Cancer Res; 41(11,part1):4715-4719 1981

After ligation of the main pancreatic duct in the splenic lobe, Syrian golden hamsters were treated, either po or sc, for 15 wk with dihydroxydi-n-propylnitrosamine for induction of pancreatic duct carcinomas. The incidence, location, and type of proliferative lesions distal and proximal to the ligature were recorded and compared to those of dihydroxydi-n-propylnitrosamine-treated hamsters without duct ligation. Proliferative duct lesions, including carcinomas, developed on either side of the ligation. While after sc administration the incidence was similar to that in nonligated animals, a markedly decreased in cidence was found in po-treated animals with duct ligation. The data suggest that the blood stream might be one major access route of the carcinogen to the pancreatic duct cell. Furthermore, it is assumed that an unimpaired release of pancreatic juice in the duodenum is necessary for the enteral resorption of dihydroxydi-n-propylnitrosamine. (Author abstract) (16 Refs)

88. NITROSAMINE-INDUCED TRANSPLANTABLE PANCREATIC DUCTAL ADENOCARCINOMA IN INBRED SYRIAN HAMSTERS.

Sindelar WF, Kurman CC
Surgery Branch, Div. Cancer Treatment, NCI, NIH, United States Dept. Health and Human Services, Bethesda, MD, 20205
JNCI; 67(5):1093-1100 1981

A pancreatic ductal carcinoma, designated CBP, was established as a transplantable tumor line in the CB/SsLak inbred strain of Syrian golden hamsters. The tumor, a primary one induced by chronic administration of the nitrosamine N-nitrobis(2-hydroxypropyl)amine, is a well-differentiated adenocarcinoma that can be propagated by transplantation in syngeneic hamsters. It grows poorly in other hamster strains. The CBP tumor develops in a predictable quantitative manner and metastasizes to regional lymph nodes. Excision of primary transplanted tumor nodules leads to immunity against subsequent secondary tumor challenges. The CBP tumor appears to be a suitable model for biologic and immunologic studies of pancreatic carcinoma in the Syrian hamster. (Author abstract) (21 Refs)

☆ U. S. GOVERNMENT PRINTING OFFICE : 1982—361-847/111

AUTHOR INDEX WITH CITATION NUMBERS

A L 68
Abe M 50
Adams JT 48
Adson MA 44
Aigner F 9
Allen LM 84
Aono G 3
Arffmann EJ 79
Asashima K 15
Ashaveri E 51
Augusto Sorbell 33
Avis FP 43
Awasthi K 10
Badrinath K 46
Banerji M 46
Barbieri GC 25
Barkin J 56
Barnes PA 7
Barthel E 72
Bateman J 56
Baumann H 82
Bazzocchi M 4
Bedikian AY 53
Bellomi M 8
Belz J 49
Bennett MH 61
Beresford SA 67
Bernardino ME 7
Birt DF 86
Bloom SR 24
Blot WJ 64
Bodey GP 53
Bodey GP 54
Bohrer MH 34
Bonacasa R 32
Bonoldi AP 32
Brassow F 80
Briccoli A 14
Brizzi F 4
Brooks J 56
Brown MR 24
Bucheler E 49
Burgess AM 54
Cambon P 22
Capelo A 32
Carling L 38
Carney JA 12
Carter WM 85
Chaffey J 56
Chen ZJ 74
Childs DS 56
Clubb KJ 84
Comincioli V 32
Comodi I 32
Cooperman AM 45
Cornwell E 51
Corson JM 56
Costanzi JJ 58
Cozzi G 8
Cozzi M 32
Cronstedt J 38
Cuckle H 70
Cunsolo A 60
Dalla Palma L 4
Danes BS 28
Daniel P 27
Davies MD 29
Davies MH 86
Del Torto T 25
Delzell E 73
Dent JG 83
Denzer U 80
Dionigi P 31
Dionigi P 32
Dionigi R 31
Dionigi R 32
Domingo EO 26
Dominioni L 31
Dorsch TR 46
Douglas HO 56
Dozois RR 44
Endo F 55
Eriksson M 71
Espinoza MC 51
Fairclough PD 59
Faltyn J 41
Ferro Machado R 33
Fischer JTh 57
Fossati GS 31
Franke D 62
Fraumeni JF 64
Freireich EJ 53
Freireich EJ 54
Fridovich SE 81
Frytak S 56
Fujimoto S 55
Fukuda Y 11
Galetti A 25
Giacardi A 37
Goidinger K 9
Goldson AL 51
Goodnight JE 18
Grahame-Smith D 24
Graichen ME 83
Grill W 17
Grimelius L 23
Gronbech JE 39
Gu Y 75
Guarasci N 14
Gupta SC 10
Hahn RG 56
Hanatani Y 13
Hansen FN 79
Hardell L 71
Haring R 35
Harris CC 77
Hashiba N 55
Haugen A 77
Held WA 82
Helmer RE 58
Helmreich ZV 45
Hemphil N 51
Hennig K 62
Herter FP 45
Hikosaka T 55
Hirota T 21
Hisamichi S 3
Hoffman L 85
Holbrook MA 56
Hricak H 5
Huang X 42
Hunicke H 16
Inaoka M 15
Iriya K 33
Ishikawa H 13
Ishioka S 33
Jackson F 77
Kagel KO 63
Kalser M 56
Kameya T 21
Karoff C 6
Kieninger G 40
Kingham JG 59
Kitaoka H 21
Kitsukawa Y 55
Kloppel G 87
Knowles BB 81
Knowlton A 56
Kodama T 21
Komatsu S 15
Konno T 19
Kurman CC 88
Kuwabara N 11
Lalanne CM 22
Langle I 9
Lapilli A 60
Lavin PT 56
Lawrence AM 46
Leonard TB 83
Lessner H 56
Levison DA 59
Li GY 74
Li JY 74
Lin CC 11
Lingao AL 26
Liu BQ 74
Livstone E 56
Lodish HF 81
Lokich J 56
Long RG 24
Lorelius L-E 23
Lubin F 70
Lugli R 25
Lundqvist G 23
Lygidakis NJ 36
MacLennan KA 61
Madrazo BL 5
Maffessanti M 4
Mahan A 51
Maldarizzi F 60
Mandel TE 85
Manegold BC 34
Mangla JC 1
Mann-Kaplan R 56
Marboe CA 45
Marchetti A 25
Marks DS 5
Marzocchi D 37

Matsumoto S 78
McIlrath DC 44
McLaren M 51
Meck RA 84
Mennicken C 34
Meo G 37
Miselli A 25
Misera R 57
Mitschke H 80
Miyahara H 65
Miyahara H 66
Miyazaki M 55
Mochinaga M 19
Modan B 70
Moertel CG 56
Mollmann K-M 2
Monson RR 73
Morettin LB 58
Morris LE 64
Mukojima T 21
Murata E 19
Murphy J 1
Nagamura Y 13
Naithani YP 10
Nauss KM 69
Nave H 56
Nazari S 31
Nazari S 32
Newberne PM 69
Newmark SR 27
Nibhanupud R 51
Nishioka K 26
Niwase M 15
Novak JW 56
O'Connell MJ 56
Oberg K 23
Ohara T 3
Ohkura H 21
Okui K 55
Orefice S 8
Palmieri B 25
Pan Q 76
Parrott DM 29
Patelli E 37
Pavesi F 31
Pearson O 51
Pereira M 1
Perzin KH 45
Petermann J 63
Peters JR 24
Petrocelli RD 5
Pettis W 77
Pezcoller C 14
Pietsch P 63
Pirazzoli PP 14
Popp JA 83
Pottern LM 64
Pour P 86
Pozzi-Mucelli R 4
Pracht B 87
Prati U 31
Prinz RA 46
Proctor HJ 43
Raia A 33
Ramaioli A 22
Ramming K 56
Rasmussen KS 79
Rayford L 51
Reimers HJ 57
Reitemeier RJ 56
Ricchi E 14
Richman S 54
Rivier JE 24
Rizzatto G 4
Rodgers CM 48
Rong G 75
Rong SD 74
Roux V 51
Rubin J 56
Ruckert K 87
Ruebner BH 12
Saccozzi R 8
Sakai P 33
Sandler MA 5
Sato T 66
Saviano MS 14
Sayed S 86
Scandellari S 60
Schneider M 22
Schroder H 16
Schutt AJ 56
Schwamberger K 9
Schwartz AL 81
Schwartz SI 48
Schwesinger G 63
Senter KL 52
Severini A 8
Shimada K 3
Shimosato Y 21
Shukla HS 10
Simpson S 27
Sindelar WF 88
Spangaro M 60
Sparagana M 46
Spiro H 56
Stoner GD 77
Strada M 8
Sun XD 74
Takada K 15
Takahashi M 50
Takezoe K 3
Taki K 11
Tashiro S 19
Taylor HF 51
Thomas JL 7
Thomas P 56
Thorsen G 39
Thyss A 22
Tibaldeschi C 31
Tomaras K 62
Trede M 34
Trigo ER 47
Tu A 61
Uemura K 19
Valdivieso M 53
Valdivieso M 54
Vale W 24
Van Heerden JA 44
Van Husten N 6
Vanlandingham S 27
Vestergaard P 38
Viaggio JA 47
Viot G 22
Viot M 22
Vlasak V 41
Vogel H 49
Walter Pinotti 33
Wang B 68
Wang S 75
Watanabe E 19
Weiland LH 56
Werner B 80
Wick MR 12
Wolf KJ 40
Yokoyama I 19
Yoneyama K 13
Yoshino J 30
Yunis AA 84
Zamcheck N 56
Zanni E 60
Zhu Y 20
Zhu Y 75
Ziegler RG 64
Zierden E 6
Zipprich B 63

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). CANCERGRAMS are available from NTIS on a standing order basis at $2 each for the North American Continent and $3 each for other nations. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

[illegible]
[illegible] of Commerce [illegible]
5285 Port Royal Road
Springfield, VA 22161

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT 19/82/03

NCI/ICRDB/CT19 82/03

PB82-939403

ICRDB

CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/03

MARCH, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
APR 20 1982
U. S. GOVT. PUBS.
DEPOSITORY 376

STAY UP TO DATE IN YOUR FIELD. AN AUTOMATIC SDI IN CANCERLIT CAN GIVE YOU A MONTHLY LIST OF NEW ABSTRACTS RETRIEVED BY A CUSTOMIZED SEARCH PROFILE. CONTACT YOUR LIBRARIAN OR THE ICRDB PROGRAM, WESTWOOD BLDG., RM. 10A18, BETHESDA, MD. 20205.

In this issue:

- SCREENING AND DIAGNOSIS 1-10
- PATHOLOGY, STAGING, AND PROGNOSIS 11-19
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS 20-52
- SURGICAL AND RADIATION THERAPY 53-58
- SELECTED CLINICAL CORRELATIONS 59-61
- REHABILITATION ASPECTS 62-69
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER 70-81
- SELECTED PRE-CLINICAL STUDIES 82-102

SCREENING AND DIAGNOSIS

1. CYTOTOXIC DRUG THERAPY AND ESOPHAGEAL CYTOLOGY (MEETING ABSTRACT).

O'Morchoe PJ, Lee DC, Almiranez CE
Loyola University Hospital, Maywood, IL
Twenty-ninth Annual Scientific Meeting of the American Society of Cytology, November 2-7, 1981, St. Louis, Missouri. The Society 90 pp., 1981.

Epithelial atypias, particularly of the respiratory and urinary tracts, have been reported in association with various drugs, the majority of which demonstrate either cytotoxic or immunosuppressive activity. Esophageal brush specimens are fre-

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20. 3173/2:

quently obtained, because of signs and symptoms of esophagitis, usually looking for cytological evidence of either candidiasis or Herpes simplex infection. This report concerns our experience with patients receiving a variety of drug including cytoxan, vincristine, methotrexate, adriamycin and amsacrine (M-AMSA). In some patients evidence of candida albicans or Herpes simplex were demonstrated. However in others, cytological atypias were noted in the absence of such organisms. These changes consisted of variations in nuclear size with crowding and overlapping, and increased nuclear cytoplasmic ratio and multiple nucleoli, many of which varied in size and shape. There was also evidence of cell death and keratinization. Other striking changes were similar to those seen following radiation therapy, such as increased cell and nuclear size, multinucleation, cytoplasmic and nuclear vacuolization and amphophilia. The atypias reported here pose a serious diagnostic problem as, in some instances, they may be so severe as to mimic malignant tranformation. Also simultaneous biopsy specimens are often not obtained because of the danger of hemorrhage. (no Refs)

2. ESOPHAGEAL CYTOPATHOLOGY IN CHINA (MEETING ABSTRACT).

Shu YJ
Chinese Academy of Medical Sciences, Beijing, China
Acta Cytol (Baltimore); 25(4):454 1981

Carcinoma of the esophagus is the most common malignancy in many parts of China. In an attempt to control the disease by early diagnosis, the ballon technique was developed approx 20 yr ago. It is now widely used in China and is accepted in France and Japan. Up to 1979, more than 500,000 people have been examined in China. It is routinely used for differentiation between benign and malignant lesions in the esophagus, and the accuracy is in the range of 90%. In mass surveys, 67% of the cancers detected have been in situ and minimally invasive carcinomas. Dysplasias have been shown to progress to invasion by cytologic studies. Utilization of this technique has made possible epidemiologic studies and, thereby, coordination of etiologic research in esophageal cancer. Detection rates of early esophageal cancer by cytologic studies are more accurate than either endoscopic or radiologic methods. (no Refs)

3. ENDOSCOPIC FOLLOW-UP OF BENIGN AND MALIGNANT GASTRIC ULCERATION (MEETING ABSTRACT).

Wright JP, Kahanowitz C
Department of Medicine, University of Cape Town, Cape Town, South Africa
S Afr Med J; 60(7):288 1981

Two hundred and forty-six patients diagnosed in 1976 as having benign (180) or malignant (66) gastric ulceration on gastroscopy were reviewed between November 1979 and May 1980. Of the 180 patients with a benign ulcer, 8 were lost to follow-up before healing and 62 (34%) had undergone surgery. Of the remaining 110 patients 18 had died, leaving 92 patients for review. Sixty-two of these patients were traced and interviewed. At review 50 patients were endoscoped and a recurrent gastric ulcer was found in 17. Ten of these healed and 7 patients were submitted to surgery bringing the surgical rate up to 40%. Only 3 out of the 69 surgical patients had an ulcer at a different site to the original. The endoscopist suspected malignancy in 20 ulcers (11%) when in fact they were benign. If ulcers on the lesser curve and prepyloric area are excluded, 6 out of 27 (22%) were thought to be malignant. A malignant ulcer was found in 66 patients. Forty are known and 23 are presumed to have died. The remaining 3 are alive and well 39, 43 and 46 mo after diagnosis. The endoscopist thought that 8 (12%) were benign ulcers. In 4 patients histology proved otherwise at the first biopsy, in 2 at the second biopsy a mo later, and in 1 at the third biopsy 2 mo after presentation. It may be concluded that 40% of gastric ulcers came to surgery within 3 1/2 yr. In 96% of cases surgery was performed for the benign ulcer. The endoscopist wrongly interpreted 11% of benign ulcers as being malignant and 12% of malignant ulcers as benign. These findings reinforce the need for adequate biopsy of all gastric ulcers. (no Refs)

4. USEFULNESS OF ANGIOGRAPHY IN THE CONTROL OF ACUTE MAJOR GASTROINTESTINAL BLEEDING IN THE CANCER PATIENT (MEETING ABSTRACT).

Soo CS, Shivshanker K, Chuang VP, Stroehlein JR
M. D. Anderson Hospital and Tumor Institute, Houston, TX, 77030
Gastroenterology; 80(5,part2):1290 1981

In major acute gastrointestinal (GI) hemorrhage the bleeding site is commonly unifocal. Thus arteriography with selective infusion or embolization may be used to control bleeding when medical management fails. Twenty-one patients with advanced cancer were evaluated angiographically. All had received chemotherapy within 2 wk of bleeding. At endoscopy the site of bleeding was in the upper GI tract in 14 and in the lower GI tract in 7. The etiology of bleeding was benign in 7 and metastatic foci in 14. The indication of angiography was continued bleeding despite supportive management. In 10/21 patients an active bleeding site was demonstrated at arteriography; all were controlled by selective Gelfoam embolization. The catheter was placed in the most appropriate artery for ia vasopressin infusion according to the sites identified at endoscopy. Bleeding was controlled in nine. Two demonstrated active bleeding at repeat arteriography and were controlled by Gelfoam embolization. After two yr of follow-up 1) nine patients are alive; 2) ten have died from progressive primary neoplasia; 3) two died of recurrent variceal bleeding. Conclusion: 1) GI bleeding from metastatic foci are efficiently controlled by embolization. 2) Endoscopy assists catheter placement for ia infusion when arteriography failed to demonstrate the bleeding site. 3) Angio graphic methods prevent exsanguination, but long term survival depends on therapy for primary neoplasm. (no Refs)

5. THE ROLE OF PREOPERATIVE ANGIOGRAPHY IN GASTRIC CANCER.

Sawai K
Dept. Surgery, Kyoto Second Red Cross Hosp., Kamigyo-ku, Kyoto 602, Japan
Nippon Geka Gakkai Zasshi; 82(5):461-468 1981

Celiac, left gastric and common hepatic angiography has been performed in 182 preoperative patients with gastric cancer. The tumor vessel or tumor stain was identified in 176 patients (96.7%). The cancers of these patients were divided into three groups, left side, right side and bilateral, according to the origin of feeding arteries of the cancer. Extension of lymph node metastasis in the three angiographic groups were compared. Cancers fed by the left gastric, short gastric and left gastroepiploic arteries were classified as the left side group. Since the lymph node metastasis was limited to the attendant nodes of the celiac axis and its branches in this group (N2), Appleby's total gastrectomy seems indicated for the group. Cancers fed by the right gastric, gastroduodenal and right gastroepiploic arteries were classified as the right side group. In addition to the extent mentioned above, metastasis into lymph nodes along the proper hepatic artery, behind the surface of the head of the pancreas or around the superior mesenteric artery was found in 15.1% of this group. Extended lymph node dissection should be applied to this group (R3). Cancers fed by arteries of both of the above groups were classified as the bilateral group. Because of extensive lymph node metastasis, the radical operation approach for this group is by no means curative. (22 Refs) (In JPN)

6. DIFFERENTIAL DIAGNOSIS CANCER-CHRONIC PANCREATITIS BY ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY (ERCP) (MEETING ABSTRACT).

Toussaint J, Dunham F, Engelholm L, Cremer M
Cliniques Universitaires de Bruxelles - Hospital ERASME, 808, route de Lennick, 1070 Brussels, Belgium
Gastroentest Endosc; 27(2):143 1981

ERCP gives good radiological details of the pancreatic morphology. We established a classification of the radiological findings in chronic pancreatitis and studying the radiological aspects in cancer cases we tried to identify pancreatographic details not included in the chronic pancreatitis classification and thus typical of malignant evolution. Since 1971, we have performed 7349 ERCP in 5076 patients, 283 of them had pancreatic cancer. Adenocarcinoma is the most frequent; two tumors were endocrine tumors. The mean age was 67 yr old and female were almost as numerous than male. Jaundice and loss of wt were the two symptoms for which the endoscopy was performed. Pain was present in 42% of the cases. Endoscopic examination of the second portion of the duodenum showed abnormalities in 35% of the cases. The morphological find ings by ERCP show that the cancer of the head of the pancreas is really more frequent. Based on our experience we can retain as radiological characteristics of the cancer of the pancreas giving us the possiblity for the differential diagnosis: twin stenosis of common bile duct and main pancreatic duct; sharp and homogenous enlargment above the stenosis; enlargement of the intrahepatic ducts; normal pattern beneath the stenosis; normal pancreatic parenchymography beneath the stenosis; microcysts and irregular shape of the little channels around the stricture. (no Refs)

7. CONTRIBUTION OF ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY (ERCP) IN THE DIAGNOSIS AND THE MANAGEMENT OF PAPILLARY TUMORS (MEETING ABSTRACT).

Toussaint J, Cremer M, Dunham F, De Toeuf J
Cliniques Universitaires de Bruxelles - Hospital ERASME, 808, route de Lennick, 1070 Brussels, Belgium
Gastroentest Endosc; 27(2):142 1981

In our series of 5076 patients studied by ERCP papillary carcinoma is responsible for 3.2% of cholestatic jaundice and represents 14% of 446 pancreatico-biliary tumors. In 57 patients with malignant tumor, jaundice is present in 87% of the cases and was present from 3 days to 1 yr prior to the examination. The purpose of our study is to evaluate the value of ERCP in the diagnosis and the treatment of malignant papillary tumors: the exophytic tumor is well demonstrated by duodenoscopy in 65% of the cases, biospy confirms the diagnosis in 50% of the cases, the papilla of Vater could be cannulated in 91 of the cases, retrograde cholangiography shows dilatation of the common bile duct in 83% of the cases, retrograde pancreatography shows dilatation of the ducts in 69% of the cases. Endoscopic sphincterotomy (ES) which is systemically done since 1976 demonstrates the tumor in 100% of the cases, biopsies of the edges of the ES confirms the diagnosis in all the cases. Endoscopic resection with polypectomy snare is a definitive procedure of benign tumor and is palliative in malignant cases associated with high operative risks or metastasis. Based on this information and on our experience of our 57 cases of papillary malignant tumors we have adopted now the following schema for the management of obstructive papillary tumor: Clinical and biological check-up; ultrasonography; blood ordered and ERCP within the 24 hr of admission; ES followed by placement of a perfused naso-biliary catheter; additional and complementary examinations; follow-up of the biliary drainage with new endoscopic biopsies; and definitive surgical or endoscopical treatment. (no Refs)

8. NEWER TECHNIQUES IN THE DIAGNOSIS AND TREATMENT OF PROXIMAL BILE DUCT CARCINOMA - AN ANALYSIS OF 41 CONSECUTIVE PATIENTS.

Wheeler PG, Dawson JL, Nunnerley H, Brinkley D, Laws J, Williams R
William Harvey Hosp., Ashford, Kent, London, England
Q J Med; 50(199):247-258 1981

The clinical course of 41 consecutive patients with primary bile duct carcinoma at or near the liver hilum was analyzed to determine whether the outcome was improved by newer techniques of diagnosis and treatment. The age range was wide, with one third under 50 yr. The only etiological factor identified was long-standing ulcerative colitis (present in 9.8% of patients). In one third of patients initial symptoms were misleading. The tumor had been missed in 11 (61%) of 18 patients undergoing an exploratory laparotomy at other hospitals despite operative cholangiography. None had pre-operative percutaneous cholangiography which was shown to be the best investigatory technique, giving the correct diagnosis in all cases in whom it was performed. Greyscale ultrasonography was useful and endoscopic retrograde cholangiography less so. Median survival in those treated by surgical T- or U-tube drainage (21 patients) or bypass (3) was 9 mo from diagnosis, as opposed to 3 mo in the 36.5% of patients in whom biliary drainage was not obtained. Radiotherapy, including insertion of a radioactive iridium wire through the tumor via a T- or U-tube, or percutaneously, was performed in nine patients and improved the duration of survival compared with tube drainage alone. The new percutaneous techniques offer a useful alternative to surgery for palliative drainage and radiotherapy. (Author abstract) (19 Refs)

9. EVALUATION OF VARIOUS METHODS OF DIAGNOSING MALIGNANT TUMORS OF THE SMALL INTESTINE.

Asakura H, Watanabe M, Aiso S, Miura S, Kobayashi K, Hibi T, Morishita T, Tsuchiya M, Sugino Y, Kumakura K
Dept. Internal Medicine, Keio Univ. Sch. Medicine, Tokyo, Japan
I To Cho; 16(9):999-1008 1981

Various methods of diagnosis (clinical symptoms, common clinical laboratory tests, gastrointestinal roentgenography, abdominal angiography, small intestinal enteroscopy, and computed tomography scan) were evaluated in 10 cases (6 men, 4 women; 49-64 yr old) of malignant tumors of the small intestine. The tumors were carcinoma (3), leiomyosarcoma (4), and malignant lymphoma (3). There were no distinctive clinical symptoms; bowel obstruction was observed in three, abdominal pain in eight, bloody stools in one, and abdominal swelling in three. Mild iron-deficiency anemia and occult blood were observed in all patients, and one patient had high levels of serum carcinoembryonic antigen. Double-contrast roentgenography performed with intubation was excellent for diagnosing presence and location of tumors, and although each tumor type had characteristic x-ray patterns, similarity of x-ray findings in some cases made differential diagnosis difficult. Enteroscopy for macroscopic observation and biopsy for microscopic observation were the best means of diagnosis, but procedural problems existed for each of these methods. Angiography was thought to be more useful in diagnosis of small intestinal tumors than tumors of other organs; angiography was particularly useful with leiomyosarcoma but not very useful with carcinoma. Computed tomographic scans were useful in visualizing intestinal thickening and tumor patterns outside and inside the intestinal canal. (31 Refs) (In JPN)

10. DID MEMBERSHIP IN AMHT PROGRAMS SUCCEED IN ELIMINATING CANCER DEATHS?

Kiyoshima K
Perfect Liberty Health Control Center, Osaka, Japan
Excerpta Med Int Congr Ser; 539:426-427 1981

In an assessment of the semiannual tests given to greater than 40,000 members, an attempt was made to find the difference between actual deaths due to a specific cause and such deaths in a hypothetical sex- and age-matched group. Eleven out of 18,644 members died of gastric cancer compared to 35.6 deaths in the control group. However, 114 cases were detected among Center members; 69 on their first visit, 45 on their second or later visits. Among these 45 cases, 33 had no positive findings in previous examinations, while 12 had signs retrospectively suggesting presence of cancer. Among the 33/45 without positive signs, 27 cases received curative gastrectomies and can be considered cases of early detection. A similar analysis is presented for deaths due to uterine cancer, (1 death compared to 2.1 expected deaths in a control group). It is concluded that the Center's health maintenance plan with semiannual examinations has succeeded in the elimination of a number of deaths due to gastric and uterine cancers. The retesting interval of 6 mo is considered reasonable provided x-ray examinations in younger examinees is minimized. (no Refs)

PATHOLOGY, STAGING, AND PROGNOSIS

11. MICROCYSTIC ADENOMA OF THE PANCREAS (MEETING ABSTRACT).

Zamora JL, Manaligod JR
Department of Surgery, Abraham Lincoln School of Medicine, University of Illinois, Chicago, IL
Newsletter Natl Pancreas Cancer Project; VI(2):68 1981

Two cases of Microcystic Adenoma of the Pancreas were seen. The patients were elderly females affected by a slow growing abdominal mass. At surgery the tumors had a light pink to grayish color, the surface was finely granular and their consistency was soft rubbery. This benign tumor has constant and distinct clinicopathologic characteristics as described recently by Compagno and Oertel of the Armed Forces Institute of Pathology. It's slowly growing neoplasma that is thought to arise in the centroacinar cells of the pancreas. It has a structure composed of multiple tiny cysts divided by fibrocalcific septae and lined with flat cuboidal epithelium. The cysts contain proteinaceous material and there are intracytoplasmic glycogen granules in the epithelial cells. When the diagnosis is clearly established, if the patient is symptomatic, the treatment is local excision. It is very common to encounter radiate, (sunburst) calcifications on the plain abdominal roentgenogram. In contrast with the Microcystic Adenoma, the Mucinous Cystadenoma - Cystadenocarcinoma of the pancreas is an aggressive neoplasm that is thought to always become malignant when left to its natural course. It's formed by large loculations, contains acid mucin and is lined by columnar epithelium with papillary formations. Frequently there is coexistence of benign and malignant areas in the same tumor. Obviously, the Mucinous Cystadenoma - Cystadenocarcinoma requires early and aggressive treatment. Traditionally, both these tumors have been classified under the same category, and the terms 'Papillary, Mucinous, Serous and Microcystic' have all been used interchangeably. The more recent clinical and pathologic evidence, calls for a re-classification of the Pancreatic Cystic Neoplasms. (no Refs)

12. THE DIFFUSE ENDOCRINE-PARACRINE SYSTEM OF THE GUT IN HEALTH AND DISEASE: ULTRASTRUCTURAL FEATURES.

Solcia E, Capella C, Buffa R, Usellini L, Fiocca R, Frigerio B, Tenti P, Sessa F
Inst. Pathological Anatomy and Histopathology, Univ. Pavia, Via Forlanini 16, 27100 Pavia, Italy
Scand J Gastroenterol [Suppl]; 16(70):25-36 1981

At least 16 types of endocrine-paracrine cells have been identified ultrastructurally in the gastrointestinal mucosa. The production of hormones and local messengers such as 5-hydroxytryptamine, gastrin, cholecystokinin, somatostatin, secretin, gastric inhibitory peptide (GIP), enteroglucagon (glicentin, GLI), motilin, neurotensin, substance P and the enkephalins, by these cells, has been established. Progress has also been made in cytological studies of gut and pancreatic endocrine tumors. Argentaffin EC cell carcinoids, gastrinomas (of several ultrastructurally different varieties of gastrin cells), L-cell tumors and D-cell tumors are among those cytologically and functionally defined in the gut. Functionally undefined tumors include the so-called non-argentaffin carcinoids arising in various parts of the gut, some of which have been characterized cytologically as gastric ECL cell tumors and gastroduodenal P-D1-cell tumors. Gastrinomas, vipomas and rare argentaffin carcinoids are among gut-related pancreatic endocrine tumors. Non-functional paragangliomas, usually with some neuromatous component, occur in the duodenal wall. Extrapancreatic vipomas display ultrastructural features of ganglioneuroblastomas with peptidergic granules. (Author abstract) (41 Refs)

13. NATURAL HISTORY OF GASTRIC CARCINOMA WITH SPECIAL REFERENCE TO THE 'EARLY CANCER' STAGE: A MITOTIC INDEX STUDY ON ORIGINAL AND RECURRENT CARCINOMAS.

Concetti HF, Kato Y, Sugano H, Kitagawa T
Dept. Pathology, Cancer Inst., 37-1, Kami-Ikebukuro 1-chome, Toshima-ku, Tokyo 1 70, Japan
Gan; 72(5):665-672 1981

The natural history of gastric carcinoma, especially during the 'early cancer' stage, was investigated in terms of chronological changes in the mitotic indices of the carcinoma. Nine cases of gastric carcinoma which recurred after long periods of time were analyzed. In seven cases in which a second operation was performed after 2 to approx 14 yr, the mitotic indices of the recurrent carcinomas were about the same as or slightly higher than those of the original ones. On the other hand, in three cases in which second operations were done within 2 yr, the mitotic indices were lower in the recurrent carcinomas. No general trend toward a change in mitotic indices, relative to either the surface topography or the depth of the stomach wall at the site of the carcinoma, was observed, although there was one exceptional case in which a distinctly elevated mitotic index was obtained at the site of the nodular down-growth of the carcinoma associated with apparent morphological features of progression. In five out of seven cases with lymph node metastasis, the mitotic indices in the metastatic site were slightly higher than in the original carcinoma. The overall impression gained from the present study was of the unchangeability of the cell kinetics of gastric carcinomas during the long early cancer stage, although the results also indicate the gradual or abrupt progression of carcinomas during their natural history. The mechanisms which produced reductions in the growth rates of carcinomas within 2 yr after operations are discussed. (Author abstract) (15 Refs)

14. MITOTIC INDEX IN GASTRIC CARCINOMA OF THE SCIRRHOUS TYPE.

Kamei H, Yamaura Y, Ichikawa K, Sugimoto K, Kojima T, Terabe K, Kondo T
Second Dept. Surgery, Nagoya Univ. Sch. Medicine, 65 Tsurummai-cho, Showa-ku, Nagoya, 466, Japan
Jpn J Surg; 11(5):337-340 1981

Patients with scirrhous carcinoma (SC) of the stomach were examined in relation to sex, age, stage, and type of tumor growth. Of the 96 patients studied, 51 had non-scirrhous carcinoma (NSC: 16 medullary and 35 intermediate) and 45 had SC. In SC, the incidence of Stages III and IV was higher than that of Stages I and II (p less than 0.002). In Stage I, the incidence of the NSC type was higher than that of SC (p less than 0.001). In Stages I and II, there were 31 male patients and 15 female patients. Fewer females had NSC (14) as compared with SC type (26). Four patients with NSC and nine with SC were under 40 yr old. According to Borrmann IV classification, 4 were NSC and 18 SC (p less than 0.01). The mitotic index (MI) was 52.8 +-13.5 in the medullary type, 54.1 +-16.9 in the intermediate type, and 18.4 +-8.1 in SC. In non-cancerous mucosa, MI was 53.3 +-11.5. A significant statistical difference in MI was observed between SC and NSC (p less than 0.001). There was also significant difference between SC and non-cancerous epithelium (p less than 0.001). MI is apparently related to the extent and degree of degeneration of interstitial connective tissue. The speed of growth of the tumor mass in gastric carcinoma is not so closely related to the mitotic index, and relates to a greater extent to the number of dissociated cells entering the digestive canal. (11 Refs)

15. ROLE OF THE INTERMEDIATE CELL IN MALIGNANT DISEASE OF THE UPPER GASTROINTESTINAL TRACT (MEETING ABSTRACT).

Jass JR
Westminster Medical School, London SWIP 2AR, England
J Clin Pathol; 34(7):817 1981

A combined morphological, histochemical, and immunohistological study was carried out on the epithelium bordering adenocarcinomas of both the esophagus (32 cases) and stomach (48 cases). Benign specimens including 25 gastrectomies (selected to show intestinal metaplasia) and 10 esophageal biopsies (selected to show the columnar epithelium of Barrett) served as controls. The material was formalin-fixed and both conventional and semithin sections were prepared. These were stained with hemotoxylin and eosin, PAS-Diastase, Alcian Blue (AB)/PAS and High Iron Diamine/AB. The latter two sequences permitted distinction between neutral and acid mucins and sulpho- and sialomucins respectively. Sections from eight cases of esophageal adenocarcinoma were stained for carcinoembryonic antigen (CEA) by an immunoperoxidase technique. Columnar epithelium (Barrett's esophagus) was present in 19 of the esophageal adenocarcinomas. In these as well as the gastric cases an unusual 'intermediate' columnar cell was commonly observed showing features of both absorptive cell and a mucous cell. CEA reactivity was present along the brush border of mature absorptive cells but in the apical cytoplasm of certain intermediate cells secreting minimal amounts of mucus. There was an association between intermediate cells secreting sulphomucins and well differentiated adenocarcinomas in both the stomach and esophagus. Mature absorptive cells - that is, complete intestianl metaplasia were common in both benign and malignant specimens. Hyperplasia of the intermediate cells has also been described in metaplastic polyps of the colon and the transitional mucosa bordering colonic carcinomas and is clearly an ubiquitous disorder of growth and differentiation. (no Refs)

16. ACUTE MAJOR GASTROINTESTINAL BLEEDING IN THE CANCER PATIENT (MEETING ABSTRACT).

Shivshanker K, Stroehlein JR, Nelson RS
University of Texas System Cancer Center, Houston, TX, 77030
Gastroenterology; 80(5,part2):1283 1981

Acute gastrointestinal (GI) bleeding in patients with advanced cancer is a difficult and common management problem. 133 patients with acute GI bleeding and a hb drop of greater than or equal to 2g% were evaluated; 30% had greater than 4g% drop. Primary cancers in these patients included GI tract-25; leukemia/lymphoma-27; breast-18; gynecologic-8; renal-9; testicular-5; miscellaneous-41. Eighty-three percent had received chemotherapy within 2 wk of bleeding. Mode of presentation was hematemesis 95 (72%); melena 22 (16%); and hematochezia 16 (12%). The site of bleeding was identified as being unifocal in 93 (70%), multifocal in 26 (19%), diffuse in 6 (5%) and indeterminate in 8 (6%). Of those diagnosed 95 (73%) had benign etiologies: gastritis 18%, benign gastric ulcer 14%, duodenal ulcer 12%, esophagitis 9%, varices secondary to metastatic disease 8%, Mallory Weiss tears 4%, miscellaneous 7%. In 33 (27%) a malignant process was responsible for bleeding with 25 having direct tumor invasion or metastasis to duodenum-11, small bowel-5, stomach-4, colon-3, esophagus-1, rectum-1. Hematemesis is the most common manifestation of major acute GI bleeding in patients with neoplasia. The cause of bleeding is most commonly benign and due to gastroduodenal ulcers or gastritis. Malignant sources are usually due to duodenal/jejunal metastasis or direct tumor invasion. The high incidence of unifocal processes warrants full diagnostic study and allows for endoscopic or angiographic treatment modalities and directed surgical intervention when clinically appropriate. (no Refs)

17. CARCINOMA DIAGNOSED IN EXCISED GASTRIC ULCERS.

Haukland HH, Johnson JA, Eide JT
Dept. Surgery, Inst. Clinical Medicine, Univ. Tromso, Tromso, Norway
Acta Chir Scand; 147(6):439-443 1981

Seven patients with ulcer cancer are reported. Three were peroperatively, one of them also preoperatively, suspected of malignancy and showed carcinomatous infiltration of the gastric wall, penetrating deep into the subserous layer in all cases, and lymph node infiltration in two. These patients died of their cancer, respectively 1/2, 2 and 4-1/2 yr after operation. Four patients showed peroperative gross signs of benign gastric ulcer. In three of the cases carcinoma, respecting the subserous layer, was found histologically in the excised ulcer. After subsequent radical surgery in two and biopsy from the site of ulcer excision in one, carcinoma was not found in the specimens. In the fourth case an excised piece of a prepyloric ulcer on the posterior wall showed superficial carcinoma. After subsequent radical operation persistent carcinoma was found in the resected specimen at the site of the biopsy. The four patients are alive without signs of cancer, respectively 3-1/2, 5, 8 and 8 yr after the operation. The series demonstrates that histological examination of excised gastric ulcers may lead to the diagnosis of a carcinoma, which has limited extension and good prognosis after operative treatment. (Author abstract) (17 Refs)

18. HEPATOBILIARY CANCER - SURGICAL CONSIDERATIONS.

Adson MA, Farnell MB
Section Gastroenterologic and General Surgery, Mayo Clinic, Rochester, MN
Mayo Clin Proc; 56(11):686-699 1981

Most cancers of the hepatobiliary system will have grown beyond the limits of curative resection by the time they become clinically evident. This reality has fostered therapeutic nihilism, and most physicians and surgeons in their pessimism have failed to study the early modes of spread of these tumors - patterns of growth that are relevant to proper treatment of those patients who do have lesions that can be removed with hope of achieving a cure. Moreover, anatomic and technical complexities may beget surgical reluctance in the management of potentially curable lesions. Therefore, this review is offered for orientation and perspective for those who would hope to offer optimal treatment for patients who have primary cancers of the liver, gallbladder, or biliary ducts. The review includes considerations of (1) surgical anatomy, (2) modes of spread, (3) assessment of resectability, (4) surgical technique, and (5) results of operative treatment in relation to 'curative' resection. Also offered are some guides to palliative surgical management of tumors that have reached the hepatic hilus. (Author abstract) (37 Refs)

19. MALIGNANT TUMORS AND OTHER UNUSUAL FEATURES ASSOCIATED WITH CARCINOID TUMORS OF THE GASTROINTESTINAL TRACT (MEETING ABSTRACT).

Kothari T, Mangla JC
University of Rochester Medical Center, Rochester, NY
Gastroenterology; 80(5,part2):1197 1981

The charts of 96 patients with gastrointestinal (GI) carcinoid tumors diagnosed over a 10-yr period at the University of Rochester Medical Center were reviewed and the associated malignancies and other unusual aspects analyzed. Forty-five patients had appendiceal, 31 ileal, eight rectal, three colon, two each of stomach duodenum jejunum and cystic duct. The potential for metastasis increases with increasing size of the tumors. All carcinoid tumors eventually will invade and metastasize except appendix. Surgical excision is the preferred mode of treatment. Even in patients with metastases, aggressive surgical approach prolongs the survival. Twenty-three associated malignant neoplasms were present in 17 patients which were mostly adenocarcinomas leading to an early death while the carcinoid tumors generally remained localized. While six colonic, two stomach, three endometrial, one pancreatic, two lungs, one prostatic carcinoma coexcised with carcinoid tumors of GI tract, carcinoma of rectum, ampulla, breast, brain, kidney and prostate developed in carcinoid patients one to seven yr later. There was 36% incidence of second malignant neoplasm in patients with ileal carcinoid, but no second tumor was found in patients with carcinoid of the rectum. Two patients presented with gallbladder disease and were found to have carcinoid tumors of the cystic duct. Three of the four patients with carcinoid syndrome died within two yr of the diagnosis. The presence of carcinoid tumor should alert the physician to search for a second malignant neoplasm. (no Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

20. STUDIES OF GASTRIC JUICE OF GASTRIC CANCER PATIENTS FROM THE IMMUNOLOGICAL POINT OF VIEW.

Ishigami H, Fujimoto S, Minami T, Akao T, Kitsukawa Y, Takahashi M, Miyazaki M, Okui K
First Dept. Surgery, Chiba Univ., Sch. Medicine, Inohana, Chiba 280, Japan
Rinsho Meneki; 13(Suppl2):124-132 1981

In order to determine the root of the previously reported immunosuppressive activity of gastric juice from gastric cancer patients, carcinoembryonic antigen (CEA), alpha-fetoprotein, and alpha2-macroglobulin, in gastric juice extracts were measured. Fresh gastric juice was collected from 7 healthy volunteers, 4 peptic ulcer patients and 21 gastric cancer patients, under tetragastric stimulation, and adjusted to pH 7. They were centrifuged at 2,000xg and the supernatants were lyophilized. These gastric juice extracts, which were dissolved in 0.9% NaCl soln, were assayed for protein concentration by Lowry's method and adjusted to a protein concentration of 100 ug/ml. The mean CEA level of gastric cancer juice extracts was higher than that of healthy volunteers or peptic ulcer patients. No relationship between CEA levels of serum and gastric juice existed in 17 gastric cancer patients. An inverse relationship between tumor size and gastric juice CEA level was observed in 19 patients with resectable gastric cancer. Of the 32 gastric juice extracts, 3, all from gastric cancer patients, had alpha-fetoprotein levels above 5 ng/100 ug of protein. No special relationship was found between serum and gastric juice alpha-fetoprotein levels in gastric cancer patients. Five gastric juice extracts (4 from gastric cancer patients) had more than 12 ug of alpha2-macroglobulin per 100 ug of protein. It is speculated that oncofetal antigens are partially concerned with the immunosuppression of gastric juice extracts from gastric cancer patients. (21 Refs) (In JPN)

21. BIOLOGICAL DIAGNOSIS OF THE HEPATOCELLULAR CARCINOMA ASSOCIATED WITH LIVER CIRRHOSIS: CLINICAL AND EXPERIMENTAL STUDY (MEETING ABSTRACT).

Munoz M, Amiguet JA, Conchillo F, Prieto J, Liso P
Department of Medicine, University Clinic, University of Navarra, Pamplona, Spain
Gut; 22(5):A443 1981

Hepatocellular carcinoma develops frequently from liver cirrhosis and it is often very difficult to diagnose clinically. With this in mind we studied two oncofetal antigens (carcinoembryonic antigen and alpha-fetoprotein) and five acute-phase reactants (alpha-1-acid glycoprotein, alpha-1-antitrypsin, haptoglobin, ceruloplasmin and alpha-2-macroglobulin) in 10 patients with hepatocellular carcinoma associated with liver cirrhosis. As controls we used 56 healthy subjects and 58 patients who had liver cirrhosis without hepatocellular carcinoma. We found that the hepatocellular carcinoma associated with liver cirrhosis can be biologically differentiated from liver cirrhosis by the positivity of the alpha-fetoprotein and by a significant increase of haptoglobin and the other four acute phase reactants. Moreover, regular determinations of haptoglobin in patients with liver cirrhosis showed us that, in four cases, a rise in the haptoglobin level correlated with malignity. Furthermore, an experimental study of haptoglobin in rats with liver cirrhosis and with liver cirrhosis plus hepatocellular carcinoma confirmed these results. In conclusion, acute-phase reactants and alpha-fetoprotein are good biological indicators for the diagnosis of hepatocellular carcinoma which has developed from liver cirrhosis. (no Refs)

22. USEFULNESS OF SERUM ALPHA-FETOPROTEIN IN THE DIAGNOSIS OF MINUTE HEPATOCELLULAR CARCINOMA (MEETING ABSTRACT).

Kusumoto Y, Munehisa T, Nakata K, Muro T, Kono K, Furukawa R, Ishii N, Koji T, Nagataki S
First Department of Internal Medicine, Nagasaki University School of Medicine, Nagasaki, Japan

Oncodev Biol Med; AbstractsBook,1:P65 1981

There is disagreement in the literature concerning the usefulness of the determination of serum alpha-fetoprotein (AFP) concentration in detecting minute hepatocellular carcinoma (HCC). The present study was undertaken, therefore, to investigate changes in serum AFP concentrations retrospectively in 15 patients with minute HCC (less than 5 cm in diameter). Eleven of them were operated to remove HCC and the diagnosis was confirmed by histology. Six of them were still alive and a patient received the second partial hepatectomy because of newly developed minute HCC 7 yr after the first operation. In 11 patients (80%) among these 15 patients with minute HCC, the diagnosis was initially suspected from the elevation of serum AFP concentrations when they had no clinical signs of HCC. Three patients showed the increased serum AFP concentrations at their first visits. However, in the other 8 patients, sudden elevation of serum AFP levels was detected during the follow up of cirrhotic patients whose serum AFP concentrations were measured once every one or two mo. The final diagnosis before operation was obtained by the hepatic angiography, computed tomography, ultrasonic echography and/or laparoscopic examination. The results suggest that the determination of serum AFP concentration is useful in suspecting minute HCC especially when serum AFP levels are determined regularly during the follow of cirrhotic patients. (no Refs)

23. ALTERED DYNAMICS OF ALPHA-FETOPROTEIN PRODUCTION FOLLOWING PYRIDOXINE AND ADENOSINE 5'-TRIPHOSPHATE ADMINISTRATION TO CIRRHOTIC PATIENTS WITH OR WITHOUT PRIMARY HEPATOMAS AND TO LI VER-INJURED AND HEPATOMA-BEARING RATS.

Watanabe A, Nagashima H
First Dept. Internal Medicine, Okayama Univ. Medical Sch., 2-5-1 Shikata-cho, Okayama 700, Japan
Oncodev Biol Med; 2(5):313-321 1981

Serum alpha-fetoprotein (AFP) levels were determined in 100 patients with liver cirrhosis. Of the 50 patients with cirrhosis and primary hepatomas, 35 had AFP levels higher than 10(4) nanog (ng)/ml. Serum AFP levels remained low (less than 200 ng/ml) in 8/50 patients with hepatomas, and in 5/50 in this group the levels were between 200 and 2,000 ng/ml. The highest AFP level found in patients with cirrhosis alone was 1,600 ng/ml. In 12 patients with chronic liver disease without clinical evidence of hepatoma and whom subsequently developed primary hepatomas over a 2 to 32 yr follow-up period, AFP levels were not useful for earlier detection. In rats with livers injured by CCl4, simultaneous injections of pyridoxine and adenosine 5'-triphosphate (ATP) resulted in significant decreases of elevated serum AFP levels. However, this treatment had no effect on the AFP levels in 3'-methyl-4-dimethylaminoazobenzene induced hepatoma-bearing rats. Ten men with cirrhosis followed for 0.4 to 24 yr were treated with pyridoxine-ATP infusion for approx 12 to 30 days. In patients with no evidence of hepatoma, increased serum AFP levels diminished gradually following treatment. In patients with definite hepatoma the serum AFP levels increased. None of the hepatoma patients responded to the treatment. These results may offer a new approach to the earlier detection of primary hepatomas in these patients. (15 Refs)

24. GAMMA-GLUTAMYL TRANSFERASE IN HUMAN HEPATOMA COMPARED WITH ADULT AND FETAL LIVER ENZYMES (MEETING ABSTRACT).

Yamamoto H, Higashino K, Sumikawa K, Hada T
The Third Department of Internal Medicine, Osaka University Hospital, 1-1-50 Fukushima, Osaka 553, Japan
Oncodev Biol Med; AbstractsBook,1:51 1981

The aim is to elucidate and compare some of enzymic and immunological properties of gamma-glutamyl transferase (gamma GT) of hepatoma tissues with those of adult and fetal liver enzymes. Gamma-GT was solubilized from human hepatoma or other tissues and partially purified by chromatography on diethylaminoethanol-cellulose and Sephadex G-200 column. An electrophoretic study showed that hepatoma gamma-GT had a slightly slower mobility than that of the other two enzymes, independently of neuraminidase treatment. Fetal liver gamma-GT had a similar mobility to adult liver enzyme. Hepatoma gamma-GT was distinguished from the other two enzymes by decreased affinity to Concanavalin A (Con A) sepharose. However, hepatoma enzyme was found to be very similar to normal adult liver enzyme in terms of mol wt, Michaelis constant, pH optimum, thermostability, effect of various L-amino acids as accept ors, behavior to divalent cations or ethylene-diaminetetraacetate, and inhibition by urea or sodium dodecyl sulfate. Furthermore, analysis by Ouchterlony double diffusion technique revealed the enzymes from the three sources shared the same antigenic site. These results suggest that the hepatoma gamma-GT seems to occur possibly by the altered glycosilation of the glycoprotein having similar peptide bonds. (no Refs)

25. A PRELIMINARY STUDY OF THE CREATINE KINASE BB ISOENZYME AS A TUMOR MARKER (MEETING ABSTRACT).

Fritsche HA, Wertlake SE
Department of Laboratory Medicine, University of Texas System Cancer Center, M. D. Anderson, Hospital Houston, TX, 77030
Oncodev Biol Med; AbstractsBook,1:P15 1981

We have used a radioimmunoassay (RIA) procedure to measure the BB isoenzyme of Creatine Kinase (CK-BB) in the serum of patients with cancer. The normal range for the assay was established in a study of 170 blood donors. The upper limit of normal for CK-BB was 8.0 ng/ml and no effect of age or sex on the normal range was observed. Serum CK-BB levels were determined in 355 cancer patients with a variety of neoplastic diseases who were in various stages of their disease. Serum CK-BB elevations were frequently observed in patients with adenocarcinoma of the gastrointestinal (GI) tract, breast and prostate. Approx 50% (10/24) of the patients with GI tract malignancy undergoing therapy and 30% (6/18) patients with breast cancer had elevated serum CK-BB levels. Elevations of CK-BB in patients with prostate cancer appeared to correlate with the presence of metastatic bone disease. CK-BB elevations by RIA were confirmed by electrophoretic studies. Serial determinations of CK-BB in patients undergoing therapy correlated with the clinical response to therapy and elevations of serum CK-BB in disease free patients signaled recurrence of the disease. Borderline elevations of CK-BB (8.0-10.0 ng/ml) were observed in some cancer patients with renal failure and drug induced cardio-toxicity. These preliminary studies suggest that the CK-BB test may be useful in the clinical management of patients with cancer. (no Refs)

26. ARYL HYDROCARBON HYDROXYLASE IN ALCOHOLIC CIRRHOSIS AND PRIMARY BILIARY CIRRHOSIS (MEETING ABSTRACT).

Woodhouse KW, Chapman PH, James FW, Macklon AF, Rawlins MD
Department of Medicine (Geriatrics), The University, Newcastle upon Tyne, England
Gut; 22(5):A419 1981

Aryl hydrocarbon hydroxylase (AHH) is involved in the transformation of polycyclic hydrocarbons to carcinogenic metabolites. In animals, hepatic AHH activity is a major determinant of the carcinogenicity of polycyclic hydrocarbons. Because the occurrence of primary liver cancer in patients with primary biliary cirrhosis is strikingly lower than in alcoholic cirrhosis, we have compared hepatic microsomal AHH activity in these two groups, and in histologically normal liver tissue obtained during diagnostic workup. Both basal and induced (after 18 hr incubation with benzanthracene) AHH activities were measured. Basal and induced AHH activity (pmol 3-OH-BP/mg protein/hr) was 95.2 +/-10.3 and 152 +/-22 in normal biopsies compared with 54.7 +/-4 and 122 +/-11 in alcoholic cirrhotics and 28.2 +/-3 and 55 +/-7 in primary biliary cirrhosis. AHH activity in both cirrhotic groups was significantly lower (p less than 0.01) than in normal patients, and the activity in primary biliary cirrhosis was significantly less (p less than 0.001) than in alcoholic cirrhosis. These differences remained significant when smokers and women were considered as separate groups. These results suggest that (1) although AHH may play a role in the pathogenesis of primary liver cancer in alcoholic cirrhosis, other factors must be involved; (2) this potential impairment in production of carcinogenic metabolities in primary biliary cirrhosis may offer some explanation for the low incidence of primary liver cancer in this group. (no Refs)

27. HCG AND HCG SUBUNITS AS TUMOUR MARKERS IN PATIENTS WITH ENDOCRINE PANCREATIC TUMOURS AND CARCINOIDS.

Oberg K, Wide L
Dept. Internal Medicine, Univ. Hosp., Uppsala, Sweden
Acta Endocrinol (Copenh); 98(2):256-260 1981

Serum levels of hCG, hCG-alpha- and hCG-beta-subunits were measured in 29 patients with APUD-tumors, 16 patients with endocrine pancreatic tumors (EPT) and 13 patients with carcinoids. Twenty out of 29 patients (69%) had elevated level of hCG and its subunits. Among patients with EPT, 11 out of 16 (69%) had raised levels of these peptides. Three patients with benign tumors had normal concentrations, thus giving a frequency of 85% in the group of malignant EPT. In patients with carcinoids 9 out of 13 (69%) had elevated serum levels of at least one of the components. A discordance in secretion pattern between the two types of APUD-tumors was noticed. Only one patient, a case with a carcinoid had raised levels of the complete hCG molecule. The levels of hCG-alpha were elevated in 23% of the patients with malignant EPT and 69% of the patients with carcinoids while the corresponding frequencies of raised hCG-beta levels were 69% and 8%, respectively. Three out of four patients with so-called non-functioning islet cell tumors had raised levels of the subunits. These results indicate that hCG subunits are valuable tumor markers in both of these APUD-tumors, and that malignant EPT predominantly secrete hCG-beta- and carcinoids hCG-alpha-subunits. (Author abstract) (10 Refs)

28. ECTOPIC HORMONE PRODUCTION BY ENDOCRINE TUMORS: LOCALIZATION OF HORMONES AT THE CELLULAR LEVEL BY IMMUNOCYTOCHEMISTRY.

Heitz PU, Kloppel G, Polak JM, Staub JJ
Dept. Pathology, Univ. Basel, Schonbeinstrasse 40, CH-4056 Basel, Switzerland
Cancer; 48(9):2029-2037 1981

Clinical and laboratory data, histologic, electron microscopic and immunocytochemical findings of the tumors of eight patients suffering from Cushing's syndrome and of one patient with hypercalcemia are described. The unlabeled antibody enzyme method was used for the detection of insulin, glucagon, somatostatin, pancreatic polypeptide, corticotropin, beta-lipotropin, calcitonin, parathyroid hormone, and gastrin. Ectopic Cushing's syndrome was caused by pancreatic endocrine tumors, medullary thyroid carcinoma, a bronchial a gastric and a thymic carcinoid, and a carcinoid of the mediastinum. Hypercalcemia in one patient was related to a pancreatic endocrine tumor. After surgery the clinical symptoms disappeared in two patients, but persisted or relapsed in five patients. ACTH-immunoreactivity could be demonstrated in six of eight tumors; calcitonin-immunoreactivity was found in the tumor of the patient suffering from hypercalcemia. ACTH-immunoreactivity could be localized to secretory granules by immunoelectron microscopy, and the presence of ACTH and beta-LPH in the same tumor cells could be shown in one pancreatic tumor. A combination of production of orthotopic and ectopic hormones was found in one, and secretion of two ectopic hormones was detected in another pancreatic endocrine tumor. (Author abstract) (41 Refs)

29. VIPOMA PRODUCING MUTIPLE MOLECULAR FORMS - STUDIES WITH METOCLOPRAMIDE (MEETING ABSTRACT).

Long RG, Bryant MG, Polak JM, Bloom SR
Departments of Medicine and Histochemistry, Hammersmith Hospital, London W12 0HS, England
Gastroenterology; 80(5,part2):1216 1981

A 48 yr old white woman was studied with a 12 mo history of profuse watery diarrhea and the loss of 13 kg in wt to 44 kg. A pancreatic Vasoactive Intestinal Polypeptide (VIP)-secreting tumor was diagnosed on the basis of repeatedly elevated plasma VIP levels and an arteriographically proven mass in the pancreatic tail. During investigation she complained of nausea and vomiting and was given the antiemetic metoclopramide, a dopamine agonist. This agent unexpectedly prevented her diarrhea for 2 mo with a mean daily fecal wt off metoclopramide of 1100g and on metoclopramide of 260g. Additionally symptomatic hypoglycemia and hyperinsulinemia occurred. A pancreatic tumor was resected and histochemical studies showed the presence of separate cells producing VIP, insulin and pancreatic polypeptide. Gel permeation chromatography on Sephadex G50 superfine demonstrated 5 different VIP immunoreactive peaks both in plasma and tumor extract. Peak 4 corresponded to the position of pure 28 amino acid porcine VIP. Total VIP immunoreactivity in the chromatographed samples pre-metoclopramide was 343pmol/l, postmetoclopramide was 230pmol/l and in the tumor was 869pmol/g wet tissue. Thus metoclopramide appeared to ameliorate the diarrhea by reducing circulating VIP immunoreactivity in the biologically active 28 amino acid position. This study provides for the first time evidence that the large mol wt forms of VIP may not be biologically active. (no Refs)

30. IMMUNO-CYTO-CHEMICAL STAINING OF MID-GUT CARCINOID TUMOURS WITH SEQUENCE-SPECIFIC GASTRIN ANTISERA.

Wilander E, El-Salhy M
Dept. Pathology, Univ. Uppsala, P.O. Box 553, S-751 22 Uppsala, Sweden
Acta Pathol Microbiol Scand [A]; 89(4):247-250 1981

Twenty typical mid-gut carcinoid tumors were examined for the presence of gastrin immuno-reactivity to antisera specific to the C-terminal pentapeptide or to the mid-portion of gastrin-17. Pentagastrin immuno-reactivity was found in seven cases, and in one of these reactivity to antiserum against the mid-portion of gastrin-17 was also observed. The results are in accordance with the previous observation that argyrophil tumor cells are present in mid-gut carcinoid tumors and may explain why peptic ulcer disease is sometimes seen in association with the carcinoid syndrome. (Author abstract) (12 Refs)

31. PROSTAGLANDIN E2 LEVELS IN GASTRIC MUCOSA AND THE RELATIONSHIP TO GASTRIC ULCERATION AND CARCINOMA (MEETING ABSTRACT).

Wright JP, Young G
Department of Medicine, University of Cape Town, Cape Town, South Africa
S Afr Med J; 60(7):291 1981

Prostaglandin synthetase inhibitors are associated with gastric mucosal damage. Prostaglandin E2 (PGE2) is known to have a cryptoprotective action and synthetic analogues of PGE2 have been shown to heal and prevent gastric ulceration. The aim of the study was to determine the relationship of PGE2 in gastric mucosa to gastric ulceration and carcinoma. Twenty-eight patients with gastric ulceration were studied. Specimens of gastric mucosa from the ulcer edge and the antrum (at least 5 cm from the ulcer edge) were taken at endoscopy, immediately extracted and assayed by radio-immunoassay. The ulcer edge was found to contain 2.96 and the antrum 1.32 ng/mg protein. Seventeen patients failed to heal and underwent surgery. In these patients the antral levels of PGE2 were lower than in the 11 patients who healed. In 7 of the healed patients, levels were obtained after healing which showed an increase from 1.49 to 2.37 ng/ml. In 11 patients with gastric carcinoma there was a wide scatter of levels in the antrum. In all of the patients studied the antral and body levels were similar. In 4 normal subjects antral levels were found to be 3.87 ng/ml. In summary, we have shown that gastric mucosal PGE2 levels are: (1) lower in patients with non-healing ulcers than in patients with healing ulcers; (2) higher in patients who have a healed gastric ulcer than in patients in whom the healing process is not yet complete; (3) variable in patients with gastric carcinoma, (4) equal in body and antrum; and (5) probably lower in patients with gastric ulceration than in normal subjects. (no Refs)

32. LACTOFERRIN CONCENTRATION IN THE PLASMA OF PATIENTS WITH CHRONIC PANCREATITIS AND WITH CARCINOMA OF THE PANCREAS. STUDY OF DIFFERENT CIRCULATING MOLECULAR FORMS (MEETING ABSTRACT).

Benini L, Harvey RF, Vantini I, Piubello W, Brocco G, Benini P, Cavallini G, Scuro LA
Clinica Medica III, University of Padua, 37134 Verona, Italy
Newsletter Natl Pancreas Cancer Project; VI(2):9 1981

Recently, different molecular forms of circulating lactoferrin have been suggested, probably of 'secretory' and/or leucocytic origin. This study is aimed at investigating, using an original and reliable radioimmunoassay, the levels of plasma lactoferrin in chronic pancreatic disease and the different molecular forms of this protein, with column chromatography (Sephadex G 200). Patients with chronic calcified pancreatitis (CCP) showed lactoferrin plasma levels significantly higher than control subjects (CS), without any overlap with the values observed in pancreatic carcinoma (PC). As for the circulating molecular forms of lactoferrin, the CS and PC showed a single peak with high mol wt, consistent with the 'leucocytic' lactoferrin, whereas in the patients with CCP a second peak was detected, with low mol wt, consistent with the 'secretory' lactoferrin. These data suggest a different quantitative and qualitative behavior of lactoferrin in the plasma of patients with CCP and PC. (no Refs)

33. SERUM CERULOPLASMIN LEVELS IN SURGICAL CANCER PATIENTS: RELATIONSHIP WITH TUMOR STAGE AND POSTOPERATIVE COMPLICATIONS (MEETING ABSTRACT).

Dionigi P, Dionigi R, Pavesi F, Mazari S, Goggi D
Istituto di Palologia Chirorgica, Universita di Pavia, Pavia 1-27100, Italy
Eur Surg Res; 13(1):31 1981

The purpose of this study is: (1) to evaluate serum ceruloplasmin (CP) in surgical patients with different types of neoplasias; (2) to analyze the possible relationship between CP levels and age, sex and tumor stage; (3) to determine the relative value of preoperative CP to identify cancer patients with higher risk of postoperative septic complications. CP has been evaluated at admission in 109 surgical cancer patients (48 males, 61 females, mean age 57 yr) divided in 5 groups: breast, melanoma, lymphoma, esophagus-stomach, sigma-rectum; 33 controls (27 males, 6 females, mean age 41 yr) were normal subjects or patients with minor surgical benign lesions. Tumor-stage (I-IV) was evaluated following International Union Against Cancer classification. Patients were defined septic if they presented after surgery a diagnosed focus of infection or if they had an undiagnosed fever for at least 3 days. CP has been evaluated by single radial immunodiffusion technique. Cancer patients presented significantly higher values of CP than controls. Minor differences were observed in melanoma, whereas CP was more significantly increased in breast, esophagus-stomach, sigma-rectum, and lymphoma. CP did not correlate with sex and age within the 5 groups considered; on the contrary a positive correlation was found with tumor stage. In fact, the lower levels of CP were observed in patients at stage I, intermediate values at stage II and III, and higher values at stage IV. The results of this study show a positive relationship between CP and tumor progression suggesting that variations of CP may have an important clinical value for the evaluation of the diffusion of different neoplasias. (no Refs)

34. CATHEPSIN B ACTIVITY IN PANCREATIC JUICE OF PATIENTS WITH CANCER OF THE PANCREAS (MEETING ABSTRACT).

Rinderknecht H, Renner IG

Veterans Administration Medical Center, Sepulveda, CA, 91343

Newsletter Natl Pancreas Cancer Project; VI(2):50 1981

Abnormalities in pancreatic secretion preceding the appearance of pancreatic tumors might facilitate early detection. Pancreatic secretory profiles for a number of enzymes and proteins have been established for healthy subjects, but no one has as yet made a similar study in patients with cancer of the pancreas. Recently, we obtained a 30 min collection (min by min) of pancreatic juice (PJ) prior to surgery from 2 patients with pancreatic cancer by cannulation of the pancreatic duct and sequential stimulation of the pancreas with secretin and cholecystokinin. Patient A had an adenocarcinoma of the head of the pancreas, patient B an adenocarcinoma of the ampulla of Vater with almost total ablation of acinar cells. Among several abnormalities in their PJ the most striking was the pronounced cathepsin B activity. This enzyme which is barely detectable in normal PJ was identified by its substrate specificity (Cbz-Ala-(Arg)(2)-4-methoxy-2-naphthylamide), inhibition by iodoacetate and resistance to the trypsin inhibitor TRASYLOL. It is of interest here that secretion of high levels of cathepsin B activity by malignant breast tumors has been reported recently. Proteolytic activity in PJ of patient B who no longer secreted trypsinogen or other digestive enzymes was totally inhibited by iodoacetate and thus appeared to be cathepsin B only. In contrast, PJ from patient A was not completely inhibited even in the presence of excess of both inhibitors. As activity resistant to both inhibitors was found only in PJ containing cathepsin B as well as the normal digestive enzymes, it is most likely due to cathepsin-activated mesotrypsinogen, the inhibitor-resistant trypsin variant recently discovered by us. The role and significance of these enzymes in pancreatic pathology remains to be clarified. (no Refs)

35. ANTITHROMBIN III PROFILES IN MALIGNANCY, RELATIONSHIP TO PRIMARY TUMORS AND META STATIC SITES.

Honegger H, Anderson N, Hewitt LA, Tullis JL

(c/o Tullis) Dept. Medicine, New England Deaconess Hosp., Boston, MA, 02215

Thromb Haemost; 46(2):500-503 1981

Variations in antithrombin III (AT III) were correlated with origin of tumor, tumor spread, and localization of metastases in 118 patients with tumors (breast 34, lung 25, colon 19, lymphoma 15, ovary 12, pancreas 6, prostate gland 7) and in 247 normal controls. AT III was studied by standard clotting (functional) assays and protein concentration was examined by an immunodiffusion technique. The mean AT III functional level of all tumors was 28.60 +-16.63 sec vs 35.43 +-12.74 sec for controls; in 112 patients immunologic AT III was also lower than normal. AT III deficiency was more common in patients with cancer of the colon, ovary, and prostate than in those with other common tumors. AT III was lower in patients with local spread and metastases compared with those in remission. In 33 patients with proven liver metastases, functional AT III was reduced to av 23.3 sec and was correlated with reduction in serum albumin. The correlation coefficient (R) for functional and immunologic AT III in a blood sample from a given patient was approx 0.3 in controls; R increased in certain tumors, reaching greater than 0.5 in metastatic tumors and 0.72 in lymphoma. The implications of low AT III are not fully understood. (19 Refs)

36. SULFATION OF LITHOCHOLIC ACID IS INCOMPLETE IN BOLIVIAN PATIENTS WITH CHOLELITHIASIS AND CANCER OF THE GALLBLADDER (MEETING ABSTRACT).

Takabayashi A, Balistreri WF, Watkins JB, Soloway RD, Rios-Dalenz J, Henson DW

University of Pennsylvania, Philadelphia, PA

Gastroenterology; 80(5,part2):1352 1981

Cancer of the gallbladder is greatly increased in Bolivia (Bol) compared to the United States. We have shown that glyco-(GLC) and taurolithocholate (TLC) are increased in bile of Bolivian patients with cholesterol cholelithiasis (Bol-CS) and in those with stones and gallbladder cancer (Bol-CA). GLC and TLC were measured by high performance liquid chromatography and sulfates of lithocholate conjugates (SLCC) were measured by radioimmunoassay. There were no differences in the mean concentrations of SLCC (mM) in Bol and US normals (NL). SLCC were not different in US-CS and Bol-CS, despite an increase in GLC+TLC in Bol-CS (p greater than 0.001) causing a decrease in % sulfation. The levels of SLCC and TLC+GLC were decreased in patients with Bol-CA compared to Bol-CS, but the % sulfation was the same. Both groups had a lower % sulfation than Bol-NL. We conclude that inadequate sulfation is present in Bolivian patients with cholelithiasis, with or without cancer, indicating that the defect is present before the development of cancer. This could be due to any or all of the following: bacterial formation of lithocholate and/or desulfation of biliary SLCC in the small intestine followed by reabsorption, inadequate hepatic sulfation capacity over-loaded by a greatly increased level of portal venous lithocholate. Non-sulfated lithocholate conjugates secreted into bile should be largely absorbed in the small intestine adding to the increased hepatic load and may predispose to gallstone formation and cancer. (no Refs)

37. PLASMA ZINC AND VITAMIN A IN HUMAN SQUAMOUS ESOPHAGEAL CANCER (MEETING ABSTRACT).

Mellow MH, Layne EA, Lipman TO, Kaushik M, Hostetler C, Smith JC
Veterans Administration Medical Center, Washington, DC, 20422
Gastroenterology; 80(5,part2):1229 1981

Experimental zinc deficiency in animals promotes esophageal tumor induction with chemical carcinogens. Retinoid administration has suppressed tumor progression in animals. Decreased plasma zinc and vitamin A have been noted in several human squamous cancers. We measured plasma zinc and vitamin A in alcoholic patients with newly diagnosed squamous esophageal cancer and compared these to three age-matched control groups: alcoholics without cancer; non-alcoholics with non-squamous cancer; non-alcoholics without cancer. Patients with factors thought to reduce plasma zinc or vitamin A were excluded: severe liver disease, severe protein energy malnutrition, infection, other acute illness. Conclusions: 1) Alcoholic patients with esophageal cancer have significantly decreased mean plasma zinc values compared to non-alcoholics without cancer. This is unlikely due to alcohol ingestion per se since 6 of 12 alcoholics without cancer had normal zinc values. This is also not due to the presence of a cancer since the non-alcoholics with cancer had normal zinc. 2) Patients with esophageal cancer as well as non-esophageal cancers had low mean plasma vitamin A. Our findings suggest a true deficiency of zinc and/or vitamin A nutrition in patients with esophageal cancer, which may have preceded the onset of illness. Zinc and/or vitamin A deficiency may contribute to the development of esophageal cancer. (no Refs)

38. THE INCIDENCE OF HYPERAMYLASEMIA IN MALIGNANT DISEASE (MEETING ABSTRACT).

Buch P, Bank S, Anfang C, Lendvai S, Kranz V
Div. of Gastroenterology, Long Island Jewish-Hillside Medical Center, New Hyde Park, NY, 11042
Gastroenterology; 80(5,part2):1118 1981

Total amylase values and isoamylase patterns were determined in 60 patients with carcinoma and lymphoma and in 19 additional patients with hematologic malignancies. The Phadebus technique was employed. Cellulose acetate electrophoresis was used to obtain S and P isoamylase patterns. Of the total 60 consecutive patients studied with solid tumors, 12 and high total amylase values. Ten of the elevated amylase values were between 312 and 679; however, 2 patients had S amylase greater than 1000, 1 a lymphoma patient and the other a patient with diffuse metastatic disease of undetermined etiology. Seven of the 12 cases had S predominant amylase and 5 had P predominant amylase. A high P amylase was found in both cases of pancreatic carcinoma. Six of the 19 cases of hematologic malignancies showed an elevated amylase value (32%); 5 of these had P predominance. This study has shown in 18.3% incidence of elevated serum amylase in various solid tumors. It is of interest that the predominant pattern in 5 patients was of the P type, 3 were not pancreatic carcinoma. The reason for this is unexplained. (no Refs)

39. PREGNANCY-SPECIFIC BETA GLYCOPROTEIN (SP1) IN TUMOURS OF THE HUMAN GASTROINTESTINAL TRACT.

Skinner JM, Whitehead R
Pathology Dept., Flinders Univ. South Australia, Bedford Park 5042, S. A., Australia
Br J Cancer; 44(3):476-478 1981

The presence of pregnancy-specific beta-glycoprotein (SP1) was studied in specimens of stomach carcinoma, colonic carcinoma, tubulovillous adenoma, and metaplastic polyp. Immunohistochemical assay showed positive staining in 9/18 cases of stomach carcinomas and in 4/17 cases of intestinal metaplasia associated with cancer. SP1 was not present in 13 cases of intestinal metaplasia with atrophic gastritis only. SP1 was present in 12/20 cases of colonic cancer, 6/22 cases of tubulovillous adenoma and 2/6 cases of metaplastic polyps. (18 Refs)

40. A MICROCOMPUTER-ASSISTED QUANTIFICATION OF SECRETORY ABNORMALITIES IN HUMAN PANCREATIC CARCINOMA (MEETING ABSTRACT).

Allan BJ, White TT, Schilling JJ
Dept. of Surgery RF-25, University of Washington, Seattle, WA, 98195
Newsletter Natl Pancreas Cancer Project; VI(2):4 1981

Abnormalities in the protein composition are readily apparent when protein patterns of one or two specimens are compared. Difficulties arise when quantification and statistical comparisons of large numbers of specimens are desired. Recently we have successfully used a microcomputer to analyze the isoelectric focusing (IEF) patterns of large numbers of specimes. We have used this approach to compare three groups of ten specimes of human ductal pancreatic juice from patients with pancreatic carcinoma, ampullary carcinoma, and no known pancreatic disease. Inactive specimens were selected and analyzed by IEF on thin layers of polyacrylamide gel over a pH range of 3 to 10. By obtaining reproducible IEF patterns and by sampling the data every 0.25 mm (250nm), we have found significant differences even in very narrow regions of the patterns (as low as 0.6 mm). Portions of the av pattern from cancer patients differed from those from patients without pancreatic disease. Six regions of the patterns were found to be significantly lower in the secretions from pancreas cancer. Five of these regions contained zymogens. The greatest decrease was found in the band containing chymotrypsinogen. No elevations were found to be significant. These results show quantitatively that the pancreatic secretions are significantly altered in pancreatic carcinoma. We were also impressed with the sensitivity of this method for the detection of significant changes in very narrow regions of the patterns analyzed. (no Refs)

41. NITRITE STABILITY AND NITROSATION POTENTIAL IN HUMAN GASTRIC JUICE.

Tannenbaum SR, Moran D, Falchuk KR, Correa P, Cuello C
Dept. Nutrition and Food Science, Massachusetts Inst. Technology, Cambridge, MA, 02139
Cancer Lett; 14(2):131-136 1981

Human gastric juice from patients free of chronic atrophic gastritis (CAG) and intestinal metaplasia (IM) was shown to contain factors which rapidly destroy nitrite. Continued generation of nitrite as a result of hypochlorhydria was found to deplete gastric juice of its protective factors and lead to an elevated rate of nitrosation. It is suggested that ascorbic acid and alpha-tocopherol may be useful in areas where gastric cancer is prevalent since these drugs destroy nitrite. (17 Refs)

42. THE LUNDH TEST: A REVIEW OF ITS CLINICAL USE IN THE DIAGNOSIS OF PANCREATIC DISEASE.

Waller SL, Smithies A, Kapp F, Loyaza M, Noguera EC, Philippakos D, Stacher HG
Gastroenterology Unit, Repatriation General Hosp., Concord, New South Wales 2139, Australia
Aust NZ J Med; 11(5):488-493 1981

The clinical value of the Lundh test in the diagnosis of pancreatic disorders was reviewed retrospectively for 139 patients with proven pancreatic disease (15 acute and 72 chronic pancreatitis, 51 carcinoma of the pancreas and 1 partial pancreatectomy). There was a good separation between patients with pancreatic disease and those with other gastrointestinal disorders who presented with similar symptoms. The test was most helpful in patients with chronic pancreatitis (diagnostic rate 89%, mean tryptic activity (MTA) less than 7 U), more particularly in those presenting with jaundice or steatorrhea (100%) than pain (86%), but less successful (diagnostic rate 68%) in carcinoma of the pancreas (steatorrhea 100%; jaundice 64%; pain 55%). Complete absence of bile from duodenal juice in jaundiced patients usually indicated pancreatic or hepatobiliary carcinoma. An abnormal but not diagnostic MTA (7 to less than 10 U) was seen in 7% of patients with chronic pancreatitis, 13% with carcinoma of the pancreas and 11% with non-pancreatic disorders and suggested the need for further pancreatic investigation. Cytological examination of duodenal juice increased the usefulness of the test. Although malignant cells were rarely seen, characteristic (degenerate) cells were found in 22 of 44 (50%) patients with, but only 5 of 85 (6%) without pancreatic disease, even when the MTA was normal. The Lundh test can be conveniently combined with a jejunal biopsy at the same intubation for the investigation of diarrhea or steatorrhea. (Author abstract) (19 Refs)

43. HEPATOCELLULAR CARCINOMA AND HEPATITIS-B-VIRUS: MORE ON THEIR RELATIONSHIP (MEETING ABSTRACT).

de Franchis R, Primignani M, Vecchi M, Zannier PM, Colombo M, Colucci G, Tommasini M
Clinica Medica III, University of Milano, Milan, Italy
Gastroenterology; 80(5,part2):1329 1981

To evaluate the strength of the association of Hepatocellular Carcinoma (HCC) with current or past Hepatitis-B-Virus (HBV) infection, serum HBV markers were studied in three groups of age and sex-matched patients: (a) 33 subjects with HCC, b) 33 patients with chronic active hepatitis and c) 33 hospitalized controls. Sera were tested for hepatitis B surface antigen (HBsAg), anti-HBs, anti-HBc, anti-HBc titre, HBeAg and anti-HBe by radioimmunoassay by means of commercially available kits (Abbott). The overall exposure rate to HBV (positivity for any one marker) was 94% in HCC, 85% in CAH, and 57% in controls. The prevalence of HBsAg was 36%, 12% and 9% in the three groups respectively. Prevalence of anti-HBs was much lower in HCC (3%) than in CAH (48%) and in controls (39%). Conversely, the prevalence of isolated anti-HBc positivity was 54% in HCC, 24% in CAH and 9% in controls. Serologic evidence of current HBV infection (HBsAg positivity, high-titre anti-HBc or HBeAg positivity) was more common in HCC (54%) than in CAH (18%) and controls (9%). The overall exposure rate to HBV is similar in HCC and CAH. However, serological evidence of continuing viral replication is much more common in the former group. A defective clearance of HBV in HCC is a possible explanation of the phenomenon. (no Refs)

44. LIVER CELL DYSPLASIA IN ASSOCIATION WITH HEPATOCELLULAR CARCINOMA, CIRRHOSIS AND HEPATITIS B SURFACE ANTIGEN IN HONG KONG.

Ho JC, Wu PC, Mak TK
Dept. Pathology, Univ. Hong Kong, Hong Kong, China
Int J Cancer; 28(5):571-574 1981

Liver-cell dysplasia was identified in 60% of 558 cases of cirrhosis with and without hepatocellular carcinoma (HCC) in Chinese coming to necropsy in Hong Kong from 1963 to 1978. A significant correlation was found between liver-cell dysplasia and the identification of hepatitis B surface antigen (HBsAg) in the livers, suggesting that dysplasia may be causally related to hepatitis B virus (HBV). Applying Bayes' theorem to our series of male deaths, we calculated that for Chinese male non-cirrhotics showing liver-cell dysplasia at necropsy, compared with male non-cirrhotics showing no liver-cell dysplasia, the approximate risk factor for HCC is 13:1, whereas for male cirrhotics with liver-cell dysplasia, compared with male cirrhotics without liver cell dysplasia, the risk factor for HCC is approx 2:1. In the presence of dysplasia, the risk for HCC is increased two-fold in males who are also HBsAg-positive. Thus, the presence of liver-cell dysplasia in cirrhotic or non-cirrhotic livers accompanies a significantly higher risk of developing HCC, especially in the presence of HBsAg. (Author abstract) (10 Refs)

45. GLYCOPROTEIN ANTIGENS IN GASTRIC AND COLONIC CARCINOMA (MEETING ABSTRACT).

Akahonai Y, Yachi A, Wada T
Department of Internal Medicine, Sapporo Medical College, Sapporo, Japan
Oncodev Biol Med; AbstractsBook,1:55 1981

Antisera against three antigenically different glycoprotein antigens (M1, M2 and M3) were prepared according to Bara and Burtin. M1 was confined in superficial epithelium of normal gastric mucosa and M2 was observed in the gastric and pyloric glands. M3 antigen was observed in goblet cells of intestinal metaplasia of the stomach and of the colonic mucosa. The appearance of these antigens and carcinoembryonic antigen (CEA) was investigated in tissues of gastric and colonic carcinoma. In certain cases of adenocarcinoma of the stomach, M1 and or M2 antigens were detected in the glands and cells of carcinoma. In tissues of signet-ring cell carcinoma, various combination of M1 and M3 was observed in association with CEA, suggesting the multipotentiality in this type of immature carcinoma cells. In colonic carcinoma, M3 antigen was frequently detected with occasional appearance of M1 antigen. These findings seem to indicate that occurrence of glycoprotein antigens may be related to cell differentiation of gastric and colonic carcinoma. (no Refs)

46. BIOCHEMICAL CHARACTERIZATION AND CLINICAL EVALUATION OF A HUMAN PANCREAS-SPECIFIC ANTIGEN (MEETING ABSTRACT).

Loor R, Kuriyama M, Shimano T, Manzo ML, Inaji H, Douglass HO, Berjian R, Nicolai JJ, Tytgat GN, Chu TM
Roswell Park Memorial Institute, Buffalo, NY
Newsletter Natl Pancreas Cancer Project; VI(2):36 1981

A pancreas-specific antigen (PaA) has been identified by immunologic techniques and purified from saline extract of human pancreas. The purified PaA has a mol wt of 44,000 and a sedimentation coefficient of 3.4S. PaA possessed an isoelectric point of 4.9 and migrated to alpha-beta region upon

immunoelectrophoresis. Immunochemical staining revealed that PaA was located in acinar cells of human pancreas. In addition a higher concentration of PaA was detected in pancreatic juice than in the saline extract of pancreas. A sensitive and reproducible sandwich-type enzyme immunosorbent assay has been developed for quantitation of PaA. With this method, PaA at a concentration as low as 0.8 ng/ml can be detected. Serum PaA levels from 51 healthy persons ranged from less than 4 to 34 ng/ml. Using 21.5 ng/ml (the upper 97.5 percentile of normal controls) as an upper limit, 50 of 76 pancreatic cancer (66%), 4 of 16 pancreatitis (25%) and 3 of 8 cholelithiasis (38%) had an elevated PaA. Among 16 pancreatitis patients, 3 of 6 (50%) acute pancreatitis and 1 of 10 (10%) chronic pancreatitis patients had an elevated PaA level. In 76 pancreatic cancers, 6 of 10 (60%) stage I, 11 of 18 (61%) stage II, and 33 of 48 (69%) stage III pancreatic cancer patients showed an elevated PaA level. Very few patients with other cancers, however, were shown to have an elevated PaA; 4/56 (7%) of lung cancer, 2/50 (4%) of colorectal cancer, 4/49 (8%) of prostate cancer and 1/39 (3%) of breast cancer. The sensitivity and specificity of serum PaA test for the detection of pancreatic cancer were calculated to be 66% and 95%, respectively. PaA was detected in pancreatic carcinoma by immunocytochemical technique. These results indicate that PaA may be useful as an adjunctive tool in immunodiagnosis of pancreatic cancer. (no Refs)

47. THE CLINICAL USEFULNESS OF PANCREATIC ONCOFETAL ANTIGEN IN SERUM FOR SCREENING THE PANCREATIC CANCER (MEETING ABSTRACT).

Oguchi H, Homma T, Kawa S, Nagata A, Furuta S
Department of Internal Medicine, Shinshu University School of Medicine, 3-1-1 Asahi, Matsumoto, Japan
Oncodev Biol Med; AbstractsBook,1:P64 1981

We have studied on the characterization of pancreatic oncofetal antigen (POA) and its clinical application for the diagnosis of pancreatic cancer since 1972. In this paper, we investigated the usefulness of this POA for screening the pancreatic cancer. Four hundred and forty out-patients with abdominal complaints were tested for POA and also for carcinoembryonic antigen (CEA). Ouchterlony gel diffusion method was applied for POA assay and radioimmunoassay for CEA. Among the 440 patients, POA was positive in 13 cases. There were 3 cases with pancreatic cancer, 4 with malignancy of various organs and 6 with non-malignancy. Thirty-three of these 440 patients were found to have a malignancy in various organs. Of these 33, 7 were positive POA, 12 for CEA and 17 either for POA or CEA. As to the 5 cases with pancreatic cancer diagnosed by angiography and ERCP in this study, 3 were positive for POA, 2 for CEA and 4 either for POA or CEA. These results indicate that the measurement of POA is useful in screening the pancreatic cancer and the detection rate of pancreatic cancer becomes higher when POA and CEA were assayed simultaneously. (no Refs)

48. RADIOIMMUNE ASSAY STUDIES OF SERUM AND ASCITES FROM PANCREATIC CANCER PATIENTS FOR AN ANTIGEN (DU-PAN-2) DETECTED BY A MONOCLONAL ANTIBODY (MEETING ABSTRACT).

Daasch VN, Metzgar RS
Department of Microbiology and Immunology, Duke University Medical Center, Durham, NC, 27710
Newsletter Natl Pancreas Cancer Project; VI(2):18 1981

DU-PAN-2 monoclonal antibodies detect an antigen that appears to be a glycoprotein with the antigenic determinant in the carbohydrate portion of the molecule. Treatment of reactive cells with neuraminidase destroys antigenic activity. **An inhibition radioimmune assay was developed to detect soluble DU-PAN-2 antigen in body fluids of patients with various malignancies, including pancreatic adenocarcinoma. Patient ascitic fluid or serum was preincubated with the DU-PAN-2 antibody; the mixture was then allowed to react with crude soluble antigen extracted from pancreatic tumor tissue culture cell lines, or spent medium from the cultures. DU-PAN-2 antibody bound to crude antigen was detected with 125I labeled goat anti-mouse Ig.** Strong inhibitory activity (greater than 85% inhibition) was observed in the ascitic fluid of the patient from which the immunizing cell line (HPAF) was derived. Significant inhibition (40 to 90%) was also noted in ascites from another pancreatic tumor patient as well as in ascites from patients with certain other types of carcinomas. Many ascitic fluids from non-pancreatic malignancies as well as ascites from patients with non-malignant disease demonstrated little or no blocking activity. Blocking antigen activity was also detected in a fractionated serum of a patient with advanced metastatic pancreatic cancer as well as in sera of other cancer patients. Fractionated sera from normal volunteers or leukemic patients showed little or no inhibition. (no Refs)

49. ISOLATION AND CHARACTERIZATION OF AN ANTIGEN FROM PANCREAS CARCINOMA IMMUNE COMPLEXES (MEETING ABSTRACT).

Campagnari T, Howell JH, Douglass HO, Goldrosen MH
Department of Surgical Oncology, Roswell Park Memorial Institute, Buffalo, New York, 14263
Newsletter Natl Pancreas Cancer Project; VI(2):14 1981

To date, effusion fluid from 8 patients with pancreatic cancer have been fractionated in order to obtain pancreas tumor antigen(s). Immune complex antigen was obtained by sequential ammonium sulphate precipitation, S-300 column chromatography, protein A chromatography and preparative isoelectric focusing (IEF). Potassium bromide flotation of unique low isoelectric point (pI) material yielded two fractions. Analytical gel IEF of the lipid fraction indicated that it had a pI of 3.3 while the non-lipid fraction had a pI of 2.6. Polyacrylamide gel electrophoresis in sodium dodecyl sulphate with B-mercaptoethanol of the non-lipid fraction yielded two coomasie blue staining bands. One has mol wt of 67,000 daltons while the other has a mol wt of 15,000 daltons. Five of the 8 pancreatic effusion fluids contain this acidic non-lipid molecule. Xenogeneic antisera to the acidic molecule raised in a goat by established procedures demonstrated precipitating antibody by Ouchterlony analysis to all but the two malignant effusion fluids that did not contain the acid material with a pI of 2.6. Three control effusion fluids did not contain the acidic material, and no immunologic recognition was observed with the goat antisera by Ouchterlony analysis. Thus, immune complexes from pancreatic malignant effusion fluids contain an antigen(s) with a pI of 2.6. These acidic antigen(s) will be further characterized by immunologic and biochemical criteria. (no Refs)

50. SIGNIFICANCE OF SERUM IMMUNE COMPLEX ASSAY IN CANCER OF THE STOMACH AND COLON.

Kaneko H
Second Dept. Surgery, Yokohama City Univ., Sch. Medicine, Minami-ku, Yokohama 232, Japan
Rinsho Meneki; 13(Suppl2):100-108 1981

This study represents an attempt to measure the circulating immune complexes in patents with cancer of the stomach or large intestine by the erythrocyte-amboceptor (EA) rosette inhibition test. The serum immune complex level determined by this method showed a significant correlation with that measured by the binding to surface receptors of cultured lymphoblasts (Raji cells) and a significant inverse correlation with the serum complement level (CH50). It did not correlate with the phytohemagglutinin skin test or lymphocytic blastogenesis assay, whereas the IgG.FcR+ T cell percentage was low in patients showing a high serum level of immune complexes. Clinically, circulating immune complexes were demonstrated in 66.7% of untreated patients with gastric carcinoma and 82.5% of those with carcinoma of the colon, in contrast with 5.9% in normal controls. Of these patients, those who received a curative operation and those who underwent immunochemotherapy and/or local continuous ia infusion with anticancer drugs displayed a significant decrease in circulating immune complexes. The results indicate that serum immune complexes can be measured by the EA rosette inhibition test; that there appears to be no correlation between the serum immune complex level and nonspecific cellular immune responsiveness; and that the IgG.FcR+ T cell percentage is not correlated with the serum concentration of the immune complexes but the data obtained suggest the presence of immune complexes attached to IgG.FcR+ T cells. (26 Refs) (In JPN)

51. SERIAL STUDIES OF THE LEUKOCYTE ADHERENCE INHIBITION (LAI) RESPONSE IN PANCREATIC CANCER (MEETING ABSTRACT).

Goldrosen MH, Dasmahapatra K, Vezerides M, Herrera L, Douglass HO

Department of Surgical Oncology, Roswell Park Memorial Institute, Buffalo, NY, 14263

Newsletter Natl Pancreas Cancer Project; VI(2):22 1981

Serial studies of LAI reactivity were performed with the microplate LAI assay on 45 patients with pancreatic cancer following surgical treatment. A variable LAI response was observed. The objective of this study was to ellucidate the factors that caused a variable LAI response. Both the site of metastasis and nature of treatment affected the LAI response. The LAI response in patients with metastatic disease depended on the site of metastasis. Six of 7 patients with hepatic metastasis but only 5/15 patients with extrahepatic metastasis displayed a positive LAI response. Eight of 12 patients with both hepatic and extrahepatic metastasis displayed a positive LAI response. Chemotherapy had a variable effect on the LAI response: of 16 previously LAI reactive patients who received Adriamycin, 11 became non-reactive; whereas of 17 previously LAI reactive patients who received 5-fluorouracil, 13 remained LAI reactive. Preliminary studies suggest that Prostaglandin E2 (PGE2) can convert the negative LAI response of metastatic pancreatic cancer patients to a positive LAI response. Without PGE2, 4/11 pancreatic cancer patients had a positive LAI response; with PGE2, 8/11 pancreatic cancer patients had a positive LAI response. However, 10 control patients who had a negative LAI response without PGE2, 2 converted to positive with PGE2. Thus the presence of hepatic metastasis and chemotherapy with Adriamycin can result in a negative LAI response. A negative LAI response can be converted to a positive LAI response by PGE2. (no Refs)

52. CHARACTERISTICS AND ACTION OF THE CONCANAVALIN A (CON A)-INDUCED SUPPRESSOR CELLS IN HUMAN PERIPHERAL BLOOD LYMPHOCYTES.

Toge T, Yanagawa E, Nakanishi K, Kohno H, Yamada Y, Hattori T

Dept. Surgery, Res. Inst. Nuclear Medicine and Biology, Hiroshima Univ., Kasumi, Hiroshima 734, Japan

Gan To Kagaku Ryoho; 8(5):802-808 1981

After treatment with Con A, peripheral blood lymphocytes from both normal donors and cancer patients contained Con A-induced suppressor cells which depress the proliferative response of lymphocytes from normal donors. Con A-induced suppressor cells were present among E-rosette forming cells. The activities of these cells were apparent when added on day 0 of responder cell cultures. In our assay system, allo-antigen-induced proliferation as well as mitogen-induced proliferation was depressed by Con A-activated cells. In esophageal, colorectal and gastric cancer patients, a significant increase in Con A-induced suppressor cell activity as compared with normal donors was observed, whereas in patients with breast cancer, there was no such increase in activity. In patients with advanced gastric cancer, increased suppressor cell activity was also found, and it decreased significantly after resection of the tumors. The suppressor mechanisms may be of major importance in governing the outcome of antitumor responses. (25 Refs) (In JPN)

SURGICAL AND RADIATION THERAPY

53. PRINCIPLES OF SURGICAL TREATMENT FOR CARCINOMA OF THE ESOPHAGUS. ANALYSIS OF LYMPH NODE INVOLVEMENT.

Akiyama H, Tsurumaru M, Kawamura T, Ono Y

Dept. Surgery, Toranomon Hosp., 2-2-2, Toranomon, Minato-ku, Tokyo, Japan

Ann Surg; 194(4):438-446 1981

Extensive lymph node dissections in the posterior mediastinum and abdomen were performed during resections of esophageal carcinomas. Analysis of lymph nodes demonstrated a widespread distribution of positive lymph nodes regardless of the location of the tumor. The distribution of positive lymph nodes was noticed in the area between the superior mediastinum and the celiac region. The studies were also made on the distribution of positive lymph nodes in the superior gastric region, particularly in the region of the lesser curvature of the stomach. The following principles should be followed when carcinoma of the esophagus is surgically treated. (1) Lymph node dissectio of the whole length of the posterior mediastinum, superior gastric region, and celiac region must be performed. (2) Total thoracic and abdominal esophagectomy with resection of the proximal lesser curvature and cardia, including the first to fourth branches, and preferably the fifth branch of the left gastric artery, is mandatory in order to remove possible lymphatic and intramural spread of tumors. (3) Satisfactory esophageal replacement in one stage must follow. Of the 354 patients with carcinoma of the esophagus admitted to the Toranomon Hospital, 210 underwent resections and reconstructions, for a resectability rate of 59.3%. The operative mortality rate was 1.4% and the overall 5-yr survival rate was 34.6%. (Author abstract) (14 Refs)

54. GASTRIC RESECTION OF ESOPHAGEAL CANCER.

Sabbatini M, Berruti GM
II Divisione di Chirurgia General, Ente Ospedaliero Regionale 'Ascalesi e S. Gennaro' di Napoli, Napoli, Italy
Rass Int Clin Ter; 61(5):306-309 1981

Pathogenicity of gastric resection was studied due to some published reports. Of more than 1,000 patients, who had surgery due to gastric ulcers, only 104 who had Billroth II resection 10 yr ago were studied. Precisely 82 had gastrojejunostomy (Hoffmeister-Finsterer-Verebely) and 22 resection after Polya-Kroenlein. Patients were questioned about their health, nutrition, digestion, dyspeptic disturbances and possible dumping. Esophagus and jejunum were examined radiologically and 60% endoscopically. All tests were negative except for two cases of mucous esophagitis with negative biopsy and four gastric ulcers (only one of which requested surgery, which was performed with excellent results). (10 Refs) (In ITA)

55. PERCUTANEOUS TRANSHEPATIC BILIARY DRAINAGE FOR PALLIATION OF PANCREATIC CARCINOMA (MEETING ABSTRACT).

Smale BF, Ring EJ, Rosato EF
Department of Surgery, University of Missouri, Columbia, MO
Newsletter Natl Pancreas Cancer Project; VI(2):55 1981

The efficacy of percutaneous transhepatic biliary drainage (PTBD) for long-term (greater than 3 mo) palliative decompression of biliary obstruction due to pancreatic cancer was evaluated in 10 patients. The diagnosis of pancreatic cancer was made by fine needle aspiration cytology and all patients were judged to be unresectable or inoperable based on evidence of metastatic disease, vascular encasement, or degree of operative risk. Mean duration of catheterization was 7.4 mo (range 4-13 mo). In all patients the catheter was advanced through the liver, past the obstruction and into the duodenum and internal drainage was accomplished. Effective decompression was obtained in all, as indicated by a marked decrease in serum bilirubin and alkaline phosphatase. Six patients died with a mean survival of 6.7 mo. Three patients are still living with a mean follow-up of 9.2 mo. One patient was lost to follow-up after 6 mo. Septic episodes in 3 patients were successfully treated with antibiotics and catheter replacement. There were no deaths related to biliary sepsis or the presence of the drainage catheter. Two patients developed gastric outlet obstruction necessitating gastroenterostomy. PTBD is a safe and effective means for long-term decompression of the biliary tract. PTBD represents a viable alternative to operative biliary bypass palliation of pancreatic carcinoma in selected patients. (no Refs)

56. ADJUVANT CHEMOTHERAPY WITH 5 FU AND METHYL CCNU PROLONGS RECURRENCE FREE INTERVAL AND SURVIVAL FOLLOWING CURATIVE RESECTION FOR GASTRIC ADENOCARCINOMA (MEETING ABSTRACT).

Livstone EM, Stablein DM
Yale University, New Haven, CT
Gastroenterology; 80(5,part2):1215 1981

Gastric cancer is associated with a low 5 yr cure rate after resection. To determine whether adjuvant chemotherapy might delay tumor recurrence and enhance survival following apparently curative surgical resection for gastric cancer, the Gastrointestinal Tumor Study Group, initiated a prospective, randomized clinical trial comparing 5-fluorouracil (5-FU)+Methyl lomustine (CCNU) (FUME) chemotherapy to no chemotherapy. After giving informed consent, 165 postsurgical patients were assigned to FUME or control (C) groups. Beginning within 6 wk of surgery, Methyl CCNU was given on day 1 and 5FU on days 1-5 and 5FU on days 36-40 of recurring 70 day cycles for up to 2 yr. FUME patients and C patients were both evaluated for recurrence every 3 mo. Of 58 recurrences, 34 are controls and 24 are FUME patients. Seventy-five percent of FUME patients are disease-free at 23 mo vs 75% of C patients disease-free at only 12 mo. Median disease-free interval is 29 mo in C patients but has not been reached at 42 mo in FUME patients. Of 59 deaths, 35 are C patients and 24 are FUME patients. Median survival is 33 mo in C patients but has not been reached at 42 mo in FUME patients. At a median follow-up time of 3 1/2 yr, adjuvant chemotherapy, as administered in this study, appears to have prolonged recurrence-free interval and survival in surgically 'cured' gastric cancer patients when compared to no adjuvant therapy. (no Refs)

57. POSTMORTEM FINDINGS IN PATIENTS WITH PANCREATIC CARCINOMA TREATED WITH HELIUM ION RADIATION (MEETING ABSTRACT).

Woodruff KH, Castro JR, Quivey JM, Saunders WM, Chen GT, Lyman J, Pitluck SA, To bias RW, Walton RW, Peters TC
Lawrence Berkeley Laboratory, Berkeley, CA, 94720
Newsletter Natl Pancreas Cancer Project; VI(2):66 1981

Fifty-six patients with pancreatic carcinoma have been irradiated with helium ions with/without photons. Postmortem findings on fifteen are described to assist evaluation of charged particle radiation therapy. Most patients received at least 5000 cobalt equivalent rads of 934 MeV helium irradiation in 30 fractions over 60 days. Radiation was combined with bypass surgery in most, with 5-fluorouracil in five, and partial pancreatectomy in two. Thirteen had tumors in the head of the pancreas; two were in the body or tail. They lived from two wk to one and a half yr after completion of therapy. The immediate cause of death was sepsis or bronchopneumonia in ten patients, pulmonary emboli in two, and disseminated carcinoma in three. One had no residual tumor in the pancreas although liver metastases were present. The remainder had local tumor growth despite histologic evidence of irradiation damage. Complications of therapy could be distinguished from disease complications when radiation ports and time-dose factors were taken into account. For example, thrombi were seen to be disease complications, and gastrointestinal bleeding was attributed to radiation therapy in only one of eight instances. One patient had an infarcted left lobe of the liver, perhaps attributable to irradiation. Intestinal adhesions were difficult to evaluate since most patients had undergone abdominal surgery. There were no apparent radiation induced renal or adrenal abnormalities. Since this type of followup is valuable, attempts are being made to improve the number and quality of postmortem studies. (no Refs)

58. RADIOTHERAPY FOR ESOPHAGEAL CARCINOMA.

Pearson JG
Div. Radiation Oncology, Univ. Alberta, 11560 Univ. Ave., Edmonton, Alberta T6G 2Z2, Canada
World J Surg; 5(4):489-497 1981

Improvements in curative and palliative radiotherapy for esophageal carcinoma during the last 30 yr are reviewed; value of radiotherapy in treatment of the disease is compared with that of surgery. Curative radiotherapy should be attempted in non-debilitated patients with squamous or undifferentiated carcinomas and without distant metastases. Length of the primary tumor and any detectable lymph node metastases should extend less than 9 cm; no invasion of adjacent organs should be apparent. The dose is 4,800-5,300 rads throughout a 15 x 6.5 cm cylindrical vol given in 20 equal fractions. Factors that influence prognosis following curative radiotherapy include tumor extent, sex, age and general condition, tumor site, and histology (best prognosis is for well-differentiated squamous carcinoma). Approx 75% of patients who receive palliative radiotherapy experience relief of dysphagia, and some remain euphagic . Radiotherapy frequently fails due to recurrence at the primary site. However, mortality for moderate-dose radical radiotherapy is less than that following radical surgery. Radiotherapy appears more effective for the treatment of tumors in the upper two-thirds of the esophagus, whereas surgery is more effective for tumors in the lower third. (38 Refs)

SELECTED CLINICAL CORRELATIONS

59. FOCAL LYMPHOID HYPERPLASIA OF THE STOMACH PRECEDING GASTRIC LYMPHOMA: CASE REPORT AND REVIEW OF THE LITERATURE.

Wolf JA, Spjut HJ
(c/o Spjut) Dept. Pathology, Baylor Coll. Medicine, Texas Medical Center, Houston, TX, 77030
Cancer; 48(11):2518-2523 1981

A case is reported in which focal lymphoid hyperplasia (pseudolymphoma) of the stomach preceded by 45 mo the development of gastric diffuse lymphocytic lymphoma. Review of the literature discloses only two similar cases reported with satisfactory histopathologic documentation. Analogous cases, in other anatomic sites, of an apparent association between benign and malignant lymphoid lesions are reviewed. The cases suggest that occasionally lymphoid hyperplasia of the stomach may precede lymphoma. Lymphoid hyperplasia is not yet considered a consistent precursor of lymphoma. (Author abstract) (46 Refs)

60. PRIMARY GASTRIC LYMPHOMA (MEETING ABSTRACT).

Weingrad D, Lightdale C, De Cosse J, Fillipa D, Sherlock P
Departments of Medicine, Surgery, and Pathology, Memorial Sloan-Kettering Cancer Center, New York, NY
Gastroenterology; 80(5,part2):1140 1981

The records of 46 patients with localized primary gastric lymphomas were reviewed and clinical and prognostic factors were characterized. The av age at presentation was 58 yr. The most common presenting symptoms were abdominal pain (84%) and wt loss (71%). Melena occurred in 24% and hematemesis in 6%. Laboratory evaluation yielded anemia in 41% and positive stool guaiacs in 43%. Upper gastrointestinal series showed ulcerations (39%), mass (71%) and infiltration (20%). Recurrence data after initial therapy showed 19/20 recurrences (95%) occurring in less than 24 mo with a mean of 12 mo. Overall survival was 57% 2 yr and 47% 5 yr. Sex breakdown yielded 48% male vs 72% females no evidence of disease (NED) at 2 yr. Age analysis showed less than 45 (71%) vs 45-65 (45%) vs greater than 65 (33%) NED at 2 yr. Tumor size vs survival showed: less than 5 cm (88%) vs 5-10 cm (50%) vs greater than 10 cm (48%). Survival vs stage showed Stage I (86%) vs Stage II (41%). Survival for surgery only vs surgery/radiation therapy combined revealed 59% vs 58% respectively. Analysis combining staging and therapy revealed Stage I surgery only (88%) vs Stage I surgery/radiation therapy (83%) vs Stage II surgery only (28%) vs Stage II surgery/radiation therapy (48%). In summary, female sex and younger age were associated with better survival postsurgery in primary gastric lymphoma, as were smaller tumor size, more localized stage and well-differentiated histology. The addition of abdominal radiation theray was of possible benefit only in Stage II disease. (no Refs)

61. PORTAL VEIN LIVER SCANNING FOR EARLY DETECTION OF LIVER METASTASES IN COLORECTAL CANCER (MEETING ABSTRACT).

Mooney B, Critchley M, Grime S, Taylor I
Departments of Surgery and Nuclear Medicine, Royal Liverpool Hospital, Liverpool, England
Gut; 22(5):A436 1981

The methods currently available for the preoperative detection of colorectal liver metastases are limited in their ability to detect small lesions. This has both prognostic and therapeutic implications. Access to the portal circulation via the obliterated umbilical vein is available and is used for the cytotoxic treatment of established liver metastases as well as delivery of adjuvant therapy. In this study the cannulated umbilical vein has been used to perform (1) portal venography; (2) liver blood flow measurements using Xenon 133 clearance; and (3) liver perfusion studies using Tc99m microspheres. A portal venogram and hepatogram phase are obtained. Liver blood flow and perfusion studies were performed using a gamma camera with online computer and data storage facilities. This allowed qualitative and quantitative measurements of blood flow to different areas of the normal and metastatic liver. The results of these studies have been compared with preoperative Tc99m sulphur colloid and ultrasound scans of the liver as well as liver function tests. The initial results of these studies suggest that as many as 30% of patients with macroscopically normal liver at initial surgery for colorectal cancer have evidence of metastatic disease. These techniques may allow prognosis to be refined and treatment to be planned on a more rational basis. (no Refs)

REHABILITATION ASPECTS

62. EARLY POSTOPERATIVE NUTRITIONAL SUPPORT USING THE SEROSAL TUNNEL JEJUNOSTOMY.

Cobb LM, Cartmill AM, Gilsdorf RB
(c/o Gilsdorf) Surgical Education, Good Samaritan Hosp., 1033 East McDowell Road, P.O. Box 2989, Phoenix, AZ, 85062
JPEN; 5(5):397-401 1981

The effectiveness of a silicone rubber serosal tunnel jejunostomy (STJ) in maintaining patients who have unusual metabolic demands was studied to determine if the procedure is technically safe, if nutrition can be maintained, and if iv fluid therapy time can be shortened. STJ were placed in two groups of patients: those requiring greater than 5 days of support following complex major operations either elective or for trauma and those with unresectable abdominal cancer. Thirty-eight patients (24 men, 14 women; 19-84 yr old) entered the study. Only 17 tolerated the full-strength feedings. Fourteen of these maintained their body wt throughout surgical recovery. Only 11 of these had there iv therapy stopped by day 3. Six p atients recovered so quickly they did not need tube feedings. Eleven patients had nausea, cramps, or diarrhea that limited the amount of feeding they could take and four patients had significant metabolic complications secondary to the feeding. Three patients had problems that required long-term nutritional support, two for 3 mo and the other for 6 mo. There were no STJ related complications. Three patients died but none of the deaths were STJ or feeding related. Severe metabolic complications were observed: massive gastric hypersecretion (2 patients), diarrhea (1), and hyperglycemia (1). The only nutritional parameter that had a statistically significant relationship to feeding problems was serum albumin concentration. Postoperative feeding utilizing the STJ is technically safe, but feeding difficulties can be anticipated in those patients who are septic or severely malnourished. (8 Refs)

63. NUTRITION IN PATIENTS WITH ESOPHAGEAL STENOSIS.

Palmo A, Bianco L, Grivet L, Ramella A, Avagnina S, Domeniconi D, Balzola F
Servizio di Dietetica, Ospedale Maggiore S. Giovanni Battista e della Citta di Torino, Torino, Italy
Minerva Dietol Gastroenterol; 27(2):373-374 1981

Nutrition in esophageal stenosis patients (45-69 yr old) was studied before surgery. Patients lost on the av 8-30% wt. They had benign stenosis (10), esophageal tumors (33), and cardia tumors (10). They were observed in the period 1976-1979. Patients were fed orally with a semiliquid diet (19), an elementary diet by nasogastric catheter (26), and a central parenteral nutrition (8) for 2-6 wk. Esophageal cancer patients required very elevated caloric diet to reach anabolic phase. Evident wt increase was obtained only with 71 kcal/kg. Nitrogen balance was positive in 91% of cases, which is in relation with caloric amount, but not with wt increase. Cancer patients need for higher caloric intake to reach anabolic phase, and nitrogen retention without wt increase were known, but never elucidated, although different factors could be responsible. (4 Refs) (In ITA)

64. MALIGNANT ESOPHAGO-PULMONARY FISTULA: THE ROLE OF ESOPHAGOSCOPY AND PERORAL PROSTHESIS (MEETING ABSTRACT).

Cassidy DC, Nord HJ, Boyce HW, Fabian JS
University of South Florida College of Medicine, Tampa, FL
Gastroentest Endosc; 27(2):133 1981

Esophago-pulmonary fistula (EPF) is a serious complication of esophageal malignancy. Over a five yr period, 24 patients were encountered with this complication. Nineteen (79%) were in patients with primary squamous cell carcinoma of the esophagus, 4 (17%) had primary pulmonary carcinoma with local spread to the esophagus and 1 patient underwent resection for adenocarcinoma of the distal esophagus. Among our population of unresectable primary esophageal squamous cell carcinoma, the incidence of EPF is 12%. Fistulae developed at variable x in the course of primary squamous cell carcinoma. When measured from the initial onset of the patient's first symptoms, it ranged from 3 wk to 4 1/2 yr with a median of 22 wk. Five patients (26%) received no radiotherapy (XRT) prior to developing EPF. Four (21%) developed EPF while undergoing XRT and 9 (47%) developed EPF 1-21 mo after completion of XRT. Esophageal dilation had not previously been done in 9 patients (47%). Six patients underwent dilation in the 2 wk before EPF. Following esophagoscopy and dilation, prosthesis insertion was attempted in 19 patients. Fistulae were successfully occluded with resumption of oral alimentation in 16 (84%). Thirteen of 19 patients resolved their initial aspiration pneumonia and were discharged home with post-fistula survival ranging from 2-8 mo. Aspiration pneumonia was a contributing cause of death in 9 (75%) of these patients. Eleven of 24 patients died of their initial aspiration pneumonia with a mean post-fistula survival of 4.3 wk. Esophago-pulmonary fistula is a devastating complication of esophageal malignancy. The peroral prosthesis is an effective palliative technique that can improve survival and quality of life. (no Refs)

65. PROSTHETIC TUBE FUNCTION AFTER PALLIATIVE ENDOSCOPIC INTUBATION OF OESOPHAGOGASTRIC NEOPLASMS (MEETING ABSTRACT).

Branicki FJ, Ogilvie AL, Willis M, Atkinson M
Department of Physical Chemistry, University of Nottingham, Nottingham, England
Gut; 22(5):A414 1981

One hundred and eighteen prosthetic tubes were inserted at fibreoptic endoscopy across esophagogastric neoplasms. These were followed up for a total of 428 tube mo. Food blockage occurred on 24 occasions and this was related to the length of the tube. Thirteen tubes displaced proximally, eight of which had no distal shoulder. Distal displacement occurred once, requiring laparotomy and two tubes disappeared without trace. Structural deterioration resulted in disintegration and fragmentation in two tubes, three and eight mo after insertion. Using the Instron method, tensile strengths of virgin latex and silicone rubber tubes were measured in vitro after accelerated aging by intubation in varying concentrations of hydrochloric acid and bile. After incubation in 0.1 M hydrochloric acid for one mo at 40C, the breaking force of latex fell by 31% (48 Newtons), while there was no significant change for silicone rubber tubes. Neither the addition of bile nor prior irradiation of the tubes had a significant effect. There was no change in the breaking strength of silicone rubber tubes after three mo in vivo. It is suggested that prosthetic tubes should have a distal shoulder to minimize displacement and be fabricated of silicone rubber for improved durability. (no Refs)

66. OUTCOME OF ENDOSCOPIC INTUBATION IN 100 PATIENTS WITH OESOPHAGOGASTRIC CARCINOMA (MEETING ABSTRACT).

Ogilvie AL, Dronfield MW, Ferguson R, Atkinson M
University Hospital at Nottingham, Nottingham, England
Gut; 22(5):A414 1981

Inoperable carcinoma of the esophagus or cardia causes progressive relentless dysphagia and an effective means of palliation is important in management. We describe the results of successful insertion of prosthetic tubes at fibreoptic endoscopy in 100 patients with esophagogastric neoplasms. Fifty patients had adenocarcinomas and 41 had squamous carcinomas. Their ages ranged from 50 to 91 yr. Five fatal, and nine non-fatal esophageal perforations were sustained in 118 intubations. Another seven patients died within a wk of intubation, giving an overall mortality of 12%. Eighty-five patients survived to leave hospital, with marked improvement in dysphagia. Tube function was good, but occasionally problems arose from blockage with food or overgrowth of the tumor, tube migration, or disintegration. In three patients, after radiotherapy to squamous lesions, it was possible to remove the tube without recurrence of dysphagia. Median survival time after intubation was three mo, and 28 have survived for six mo. It would appear that this is a safe and effective method of palliation of esophagogastric neoplasms. (no Refs)

67. IS THERE A ROLE FOR ENDOSCOPIC PLACEMENT OF ESOPHAGEAL PROSTHETIC DEVICES IN ESOPHAGEAL CARCINOMA? (MEETING ABSTRACT).

Dobbs SM, Graham DY, Zubler MA, Cain GD, Schwartz JT

Department of Medicine, Veterans Administration Medical Center, Houston, TX, 77211

Gastroentest Endosc; 27(2):134 1981

Endoscopic insertion of esophageal prostheses to treat dysphagia of esophageal carcinoma is becoming a widespread practice. Esophageal bougienage is an alternative and traditional therapy. We performed esophageal dilatation on 16 patients with esophageal carcinoma. The primary indication was dysphagia in 13, and dilatation prior to insertion of a prosthetic device in 3. Dilators were passed 413 x and 14 (88%) of patients were subsequently able to eat a soft or regular diet. Complications occurred in 2 patients; a closed uncomplicated perforation and gastrointestinal hemorrhage with one death. Mean survival was 6 mo. Prosthetic devices were endoscopically inserted in 3 patients because of tracheoesophageal fistula. Results were good in 2. The results with dilatation compare favorably with those of Heit et al. Esophageal dilatation has a lower morbidity and mortality rate than insertion of esophageal prostheses and we believe it is the preferred palliative therapy for esophageal obstruction. Prosthetic devices are reserved for those with refractory strictures or with tracheoesophageal fistulas. These devices may be inserted either endoscopically or intraoperatively. Better palliation of tracheoesophageal fistulas can be achieved with fewer complications and lower mortality with the former approach. (1 Ref)

68. NON SURGICAL PLASTIC PROSTHESIS AS PALLIATIVE TREATMENT FOR INOPERABLE GASTRO-OESOPHAGEAL MALIGNANT STRICTURES (MEETING ABSTRACT).

Dunham F, Toussaint J, Bourgeois N, Jeanmart J, Cremer M

Cliniques Universitaires des Bruxelles - Hospital ERASME, route de Lennick, 808, 1070 Brussels, Belgium

Gastroentest Endosc; 27(2):141 1981

In neoplasic involvement of the esophagus, acute and complete dysphagia or exacerbated coughing with pulmonary infection due to broncho-esophageal fistula are dramatic situations in which non surgical insertion of endoprosthesis is proposed as the most effective palliative treatment in emergency. Since October 1977, 49 patients were treated by this method. The mean age was 67.4 yr. Surgical contra-indications resulted from the following causes in decreasing frequency: 1) a relapse after radiotherapy, chemotherapy and/or surgery; 2) complications due to the malignant condition as broncho-esophageal fistula and metastasis; 3) the age and the vascular disorders; 4) unresectable tumor found at laparotomy. The insertion of the prosthesis was usually preceded by dilatation performed with a metal dilator (Eder-Puestow method) and/or diathermic resection. The insertion is performed with the Atkinson device under fluoroscopic control. The procedure failed in 3 cases. Three patients had radiotherapy thereafter. Some pain and/or fever can occur in the next 2 days as early complications. Some new fistulas, hemorrhage, sudden death and relapse of dysphagia can occur as later complications. The mean survival after prosthesis placement was 10 wk but some patients are still in life after 18 mo. (no Refs)

69. TUMOR RELATED GASTROPARESIS: CORRECTION WITH METOCLOPRAMIDE (MEETING ABSTRACT).

Shivshanker K, Bennetts RW, Haynie TP

M. D. Anderson Hospital and Tumor Institute, Houston, TX, 77030

Gastroenterology; 80(5,part2):1283 1981

Extensive upper gastrointestinal (GI) tumors seem to have a special predilection to develop a syndrome suggestive of gastroparesis. They complain of early satiety, post prandial fullness, nausea and vomiting in the absence of an anatomical cause being delineated. Aim: 1) To determine the frequency of this syndrome in GI tumors. 2) To evaluate the efficacy of metoclopramide in correction of gastric stasis in tumor patients. Ten patients were studied: gastric cancer 3; pancreatic cancer 6; gall bladder cancer 1. All medications were discontinued for 48 hr prior to study. Every patient underwent a gastric emptying study using a radioisotopic method using technetium-labeled diethylene triamine pentaacetic acid as a marker. Metoclopramide 10 mgm qid was administered. Patients demonstrating inprovement continued on Metoclopramide for a period of 3 mo. All 10 patients demonstrated subjective improvement as quantified by changes in symptom score. Control of nausea was the main benefit in patients whose SS improved by less than 10 points. Significant delay in gastric emptying was documented in 6 patients with initial SS greater than 20. In 5 of these patients SS improved by greater than 10 with simultaneous significant improvement in gastric emptying. These patients had long term symptom palliation and wt gain. All 10 had tumor progression despite chemotherapy. Tumor associated gastroparesis is more common than appreciated. It can be seen with pancreatic cancer without anatomical invasion of the stomach or causing obstruction. Metoclopramide is helpful in the palliative care of GI tumor patients. (no Refs)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

70. CHRONIC ATROPHIC GASTRITIS IN CHINESE.

Jiang S

Shanghai Second Medical Coll., Shanghai, People's Republic of China

Zhonghua Xiaohua Zazhi; 1(1):5-6 1981

Atrophic gastritis has been linked to gastric cancer. Its diagnosis is mainly established by fibrogastroscopy and by biopsy of the gastric mucosa, especially by the latter. Based on Strickland and Mackay's classification, atrophic gastritis can be divided into two types. Type A occurs at the gastric body and fundus and is postive for parietal cell antibody (PCA); it also tends to lead to pernicious anemia. Type B atrophic gastritis occurs mainly in the gastric antrum and is frequently PCA-negative; it does not tend to lead to pernicious anemia. This classification system has been challenged by Chinese data, which indicate that the significance and usefulness of PCA depend on regional occurrence of the disease. Chronic atrophic gastritis observed in China occurs primarily in the gastric antrum and only rarely in the gastric body; this finding coincides with the rare occurrence of pernicious anemia in China. (no Refs) (In CHI)

7

71. THE LIVER AND 'THE PILL'. PART 2: HEPATIC TUMORS.

Eisenburg J
Med. Univ.-Klinik II, Klinikum Grosshadern, Marchioninistrasse 15, 8000 Munchen 70, W. Germany
Fortschr Med; 99(38):1527-1532 1981

The relationship between the use of oral contraceptives and the development of benign or malignant tumors of the liver is discussed. Types of benign hepatic tumors are listed, and features of hepatocellular adenoma and focal nodular hyperplasia and described in detail. Hepatocellular carcinoma is examined with regard to the mechanism of its development, diagnosis, clinical features, prognosis, and treatment. Selected features of the relationship between use of oral contraceptives and occurrence of liver tumors are illustrated through a summary of the case histories of eight patients (22-45 yr old). All of the patients used oral contraceptives for 5 to 14 yr, and all subsequently developed benign liver tumors. Three of the patients were asymptomatic at the time of diagnosis. The final diagnosis was made through laparoscopy in four patients and through laparotomy in four. In one patient, a hepatoma developed in an area of benign focal nodular hyperplasia within 2 yr of the original diagnosis. It is suggested that women who used oral contraceptives for long periods should be screened for hepatic changes at regular intervals. (6 Refs) (In GER)

72. CARCINOMA OF THE PANCREAS IN CHILDHOOD (MEETING ABSTRACT).

Kissane JM
Department of Pathology, Washington University School of Medicine, St. Louis, MO, 63110
Newsletter Natl Pancreas Cancer Project; VI(2):30 1981

Current thinking is that carcinoma of the pancreas is an environmentally-related disease, a concept supported by the rarity of carcinoma in young individuals. A distinctive carcinoma of the pancreas (pancreatoblastoma, solid and papillary type) with hepatic metastases in a six-yr-old girl proceeded to her death four and a half yr later. Carcinoma of the pancreas in children occurs in these forms: 1) Adenocarcinoma analogous to that in adults, and two histologically and epidemiologically distinctive lesions, both of torpid malignancy and both related to pancreatic organogenesis; 2) Pancreatoblastoma, pleomorphic type, with acinar differentiation with or without squamous foci; and 3) Pancreatoblastoma, solid and papillary type, occurring conspicuously in adolescent or young adult women, often black. (no Refs)

73. CANCER OF THE LUNG, STOMACH, AND PANCREAS IN SOUTHERN LOUISIANA (MEETING ABSTRACT).

Correa P, Johnson WD, Fontham ET
Louisiana State University Medical Center, New Orleans, LA
Second Annual NCI/EPA/NIOSH Collaborative Workshop: Progress on Joint Environmental and Occupational Cancer Studies, September 9-11, 1981, Rockville, Maryland. National Cancer Institute 33 pp., 1981.

With the publication of the Atlases of Cancer Mortality for US Counties: 1950-1969, it became apparent that cancer mortality rates in southern Louisiana are significantly higher than rates for the United States as a whole for all sites combined and for particular site/sex/race groupings. Studies to determine factors associated with excess risk for cancer of the lung in southern Louisiana utilizing death certificate analysis reported a two-fold excess lung cancer risk associated with certain industries in 19 south Louisiana parishes. In order to adequately assess the impact of potential risk factors on cancer of the lung, stomach and pancreas, a case-control study using an interview format to obtain detailed information on residence, occupation, tobacco usage, diet, and ancestry was determined to be the next investigative step. The purpose of this research project is to evaluate environmental determinants of cancer of the lung, stomach and pancreas in south Louisiana by a comparison of the characteristics and interview responses of cancer cases and their matched controls. The 26 parishes included in the study extend from Calcasieu parish on the Texas-Louisiana border to Orleans parish on the Mississippi-Louisiana line and from the Gulf of Mexico to the middle of the state in a north-south direction. Twenty-five hospitals are participating in the study. Outside the metropolitan New Orleans area, virtually total coverage exists. Within the metro area, a sample of public and private hospitals are included. Cases diagnosed and/or treated in any study hospital are identified and confirmed primarily through hospital pathology offices. Controls are selected from hospital admissions and are matched to cases by hospital, race, sex, and age +/-5 yr and must also be residents of the 26 study parishes. Interviewing of lung cases was completed June 30, 1981, with approx 1250 cases over the two yr period, 1979-1981. Two hundred ten stomach cancer cases and 160 pancreas cancer cases have been interviewed as of June, 1981, and interviewing will continue through Spring, 1982. Preliminary analysis of smoking histories and dietary information has begun and detailed analysis will follow. (no Refs)

74. CHANGING PATTERN OF PANCREATIC CANCER IN 50 YEARS (MEETING ABSTRACT).

Parl F, Thelmo W, Pitchumoni CS
Department of Pathology and Medicine, Westchester County Medical Center, Valhalla, NY, 10591
Newsletter Natl Pancreas Cancer Project; VI(2):46 1981

A survey of data on 12951 autopsies performed between 1928 and 1977 at Westchester County Medical Center, New York, identified 114 cases of pancreatic cancer. The data with regard to the incidence of pancreatic cancer, male-female ratio, and the distribution of tumor in the head vs body and tail in the five decades studied are tabulated. The results show an increase in the incidence of pancreatic cancer (as has been clearly shown in many previous studies), pancreatic cancer in women, and body and tail cancer in contrast to cancer of the head. We have no explanation for the change in the pattern. (no Refs)

75. CANCER AND THE PHYSICOCHEMICAL QUALITY OF DRINKING WATER IN QUEBEC.

Thouez JP, Beauchamp Y, Simard A
Dept. Geography, Univ. Montreal, Montreal, Quebec, Canada
Soc Sci Med [Med Geogr]; 15(1):213-223 1981

Epidemiologic studies of the carcinogenicity of drinking water are reviewed, and results of an investigation of the relationship between the quality of drinking water and cancer in Quebec are presented. Standardized incidence ratios (SIRs) for gastrointestinal, urogenital and other neoplasms (1971-1975) were calculated for 46 Quebec census regions in which at least 50% of the population was supplied with drinking water from the St Lawrence river. Regions with high and low SIRs were compared according to the physicochemical characteristics of the drinking water. Correlation and regression analysis revealed a significant positive association between 'soft' water and the incidence of cancer of prostate, rectum, and digestive system organs. 'Hard' water was negatively associated with the incidence of stomach, prostate, and rectal cancer. (46 Refs)

76. CANCER INCIDENCE IN THE NETHERLANDS ANTILLES: A SURVEY COVERING THE PERIOD 1968-1979.

Freni SC, Freni-Titulaer LW
Dept. Pathology, Landslaboratorium, 55 Heelsumstraat, Curacao, Netherlands Antilles, West Indies
Cancer; 48(11):2535-2541 1981

In 1977 a retrospective study was started into the cancer incidence in the Netherlands Antilles, simultaneously with the onset of a cancer registry. This paper presents the results of this study and of the running registry, together covering a period of 12 yr. In total, 1,496 cancer cases were registered in males, and 1,480 in females. The resulting age-standardized cancer rate (World Standard Population) was 215 cases per 100,000 males and 164 cases per 100,000 females. The most frequently involved primary sites in males were, in order of frequency, lung, stomach, prostate, skin, and esophagus. Cancer in females was most frequently found in breast, uterine cervix, skin, stomach and esophagus. A comparison is made with countries inside and outside the Caribbean region, and a short comment is made on possible etiologic factors. (Author abstract) (17 Refs)

77. CANCER DEATHS BY CITY AND COUNTY IN JAPAN (1969-1971): A TEST OF SIGNIFICANCE FOR GEOGRAPHIC CLUSTERS OF DISEASE.

Ohno Y, Aoki K
Dept. Preventive Medicine, Nagoya Univ. Sch. Medicine, Nagoya, Japan
Soc Sci Med [Med Geogr]; 15(1):251-258 1981

The geographic distribution of esophageal, breast, and uterine cancer mortality by city and county in Japan was analyzed by a chi-square significance test. The test procedure included identification of all geographically adjacent areas, enumeration of observed adjacent concordant category pairs (accp), and calculation of expected accp. Areas with high esophageal cancer mortality were significantly clustered in both sexes, and those with low mortality were clustered in males. In the case of uterine cancer, significant aggregations were observed in areas with low or slightly high mortality rates. There was no significant aggregation for breast cancer. The validity of the chi-square test was confirmed by a Monte Carlo approach to Knox's test for space-time clustering. (11 Refs)

78. A STUDY OF THE GEOGRAPHICAL PATTERN OF CANCER MORTALITY FOR SELECTED SITES BY MEANS OF FACTOR ANALYSIS.

Inaba Y, Yanai H, Takagi H, Yamamoto SI
Dept. Hygiene, Juntendo Univ., Japan
Soc Sci Med [Med Geogr]; 15(1):233-244 1981

Factor analysis of the geographical distribution of cancer mortality in 46 Japanese prefectures during 1958-1971 revealed a significant correlation between the rate of primary industry and skin, prostate, lymphoid tissue, or bladder cancer and leukemia in men. In women, uterine and liver cancer and leukemia correlated positively with natural environmental factors (temperature, precipitation). Lung, intestinal, and oral cancer correlated with population density and appeared to be related to industrialization or urbanization. There was also a significant positive correlation between the rate of primary industry and pancreas and bile duct cancer in women. Esophageal cancer did not correlate with the primary industry rate, the natural environmental factors, or population density. Food consumption in Japan and 24 other countries also was analyzed. Despite the different data sources, similar clustering of cancer sites was noted; ie, prostate, skin, and leukemia for men, skin and leukemia for women, and intestines and lungs for both sexes. (15 Refs)

79. ADVANCES IN CANCER EPIDEMIOLOGY IN SOUTH AFRICA.

Harington JS
Cancer Res. Dept., Natl. Cancer Assoc. South Africa, P.O. Box 2000, Johannesburg 2000, South Africa
S Afr Cancer Bull; 25(1/2):9-18 1981

The epidemiology of cancer in South Africa (SA) is discussed through the review of four papers on the cancer pattern in black gold miners in SA (1964-79), comparison of cancer mortality rates in SA with those of other countries, cancer mortality rates for blacks, whites, coloreds, and Asians in SA (1970-77), and the cancer problem among blacks in SA. Mortality rates were compared for all groups (SA and US: United States). Much less cancer was found in the SA urban black than in any of the other groups. The SA colored community had rates which were very nearly the highest for most of the common cancers for each site of almost all the cancers considered. The cancer pattern in SA whites of both sexes was similar to that of US whites. Whereas US blacks had consistently higher rates than US whites but the same pattern, SA blacks had a different cancer pattern to that of either the coloreds or whites in SA. The pattern for SA blacks comprised high rates for esophagus, liver, and lung cancer in males, and for cervix and esophagus cancer in females, while rates for colorectum, stomach, and female breast cancer were low. Colored males had the highest cancer risk in SA. The colored female is not nearly as much at risk as the male. Comparison between SA colored and US black males showed cancer rates to be higher in the coloreds. The overall mortality rate for cancer in SA urban blacks was lower than that for SA whites or coloreds, both males and females. The implications of these studies are discussed. (17 Refs)

80. ON THE CAUSES AND PREVENTION OF GASTROINTESTINAL CANCERS (MEETING ABSTRACT).

Weisburger JH
American Health Foundation, Valhalla, NY, 10595
Gastroenterology; 80(5,part2):1313 1981

The decreased incidence of gastric cancer in the United States can be traced to a lower level of gastric carcinogen ingestion as a result of lesser use of pickling and greater availability on a year-round basis of foods containing vitamin C. Colon cancer is the neoplastic disease with the highest incidence in men and women in the United States. The incidence has increased only slightly in the last 50 yr. Current evidence indicates that the disease has several risk factors. The genotoxic carcinogen may be in the brown part of fried food which is shown to be highly mutagenic and in turn contains several components. Addition of soy protein inhibits the information of mutagenic materials and may be one approach to prevention. The level of total dietary fat controls the amount of biosynthetic bile acids in the gut which, in turn, have promoting activity. The concentration of bile acids depends on dietary fat ingested and stool bulk, in turn a function of dietary fiber from cereal grains. Increasing fat raises the risk, whereas increasing fiber lowers the risk. Thus, parallel concordant results from studies in man and in animal models provide a suggestive data base for approaches to the prevention of colon cancer through 1) studying the inhibition of the formation of genotoxic carcinogens in the brown part of fried food, 2) lowering the total amount of dietary fat intake, and 3) increasing the amount of fiber intake. (no Refs)

81. ADVANCES IN EXPERIMENTAL CANCER OF THE OESOPHAGUS.

van Rensburg SJ
Natl. Res. Inst. for Nutritional Diseases, P.O Box 70, Tygerberg 7505, South Africa
S Afr Cancer Bull; 25(1/2):66-76 1981

A review and assessment is presented of a biological program conducted during the past 15 yr. Initially acute toxicities of nitrosamines and the pathogenesis of esophageal carcinogenesis were studied. Attempts to identify carcinogens by biological means in high risk populations were largely futile. Acute and chronic studies of nitrosamines, especially N-nitrosomethylpentylnitrosamine, in rats and primates are reported. Short-term induction of neoplasia was studied in rats. Various studies are reported which attempted to identify carcinogenic environmental agents by biologic screening methods. Rats were maintained on food from homes of esophageal cancer sufferers in rural Transkei. Snuff, tobacco and beer from the same area were also examined. Such studies yielded no esophageal carcinoma but only possibly preneoplastic changes. Studies are underway to detect possibly promoting and inhibitory actions of many minerals, vitamins and simulated staple diets on esophageal carcinogenesis, with use of a short-term induction model. A significant promoting action of even subclincal zinc deficiency has been described. There is also evidence of promoting actions of magnesium, nicotinic acid and riboflavin deficiency, as well as by high intakes of vitamin A, when other beneficial nutrients are marginally available. (15 Refs)

SELECTED PRE-CLINICAL STUDIES

82. SENSITIVITY OF ANTICANCER AGENTS ON HUMAN GASTRIC CANCER TRANSPLANTED INTO NUDE MICE.

Tani T, Nishimawari K, Nosoh Y, Hattori T
Dept. Surgery, Res. Inst. for Nuclear Medicine and Biology, Hiroshima Univ., 1-2-3, Kasumi Minami-ku, Hiroshima 734, Japan
Jpn J Surg; 11(5):353-358 1981

The test for the sensitivity of anticancer agents on human gastric cancer was studied using nude BALB/c mice of both sexes as an in vivo model to assess the chemosensitivity of individual human tumors. Human tumors from 150 patients were transplanted into nude mice; the results of macroscopic growth and microscopic findings are described. The rate of sensitive response was 39.3% for mitomycin C (MMC; 3 mg/kg), 31.5% for 5-fluorouracil (5-FU; 75 mg/kg), and 27.0% for cyclophosphamide (CPM; 200 mg/kg). The sensitivity of anticancer agents varied according to the type of cancer. The most sensitive agent for gastric cancer was MMC, for colon cancer was 5-FU, and for breast cancer was CPM. MMC showed a good response in tumors of any Borrmann's classification and histological pattern of infiltrative growth of cancerous tissue. However, 5-FU and CPM were more effective for the Borrmann Type I, poorly differentiated adenocarcinoma, and alpha pattern of infiltration. Mice were given MMC (2 mg/kg) or CPM (100 mg/kg) ip, for 5 wk, beginning 24 hr after implantation of a gastric tumor from a 74 yr-old man. The growth curve for CPM-treated tumor was the same as that of untreated tumor, while that for MMC-treated tumor was significantly inhibited. The survival rate 1 yr after gastrectomy was significantly increased in the 12 non-curatively resected Stage IV gastric cancer patients treated with the sensitive agents. (12 Refs)

83. OPERATION-SEQUEL CARCINOMA OF THE STOMACH. EXPERIMENTAL STUDIES OF SURGICAL TECHNIQUES WITH OR WITHOUT RESECTION.

Langhans P, Heger RA, Hohenstein J, Schlake W, Bunte H
Chirurgische Universitatsklinik, Jungeblodtplatz 1, D-4400 Munster, W. Germany
World J Surg; 5(4):595-605 1981

Groups of female Wistar rats were studied to determine the role of surgical trauma, duodenogastric reflux, and carcinogen administration in development of gastric carcinoma. The rats underwent one of the following procedures: Billroth I resection, Billroth II resection, Billroth II resection with Roux-en-Y gastroenterostomy, Billroth II resection with Braun's anastomosis, gastroenterostomy without resection, or no operation. Each group was divided onto two subgroups, one receiving N-methyl-N'-nitro-N-nitrosoguanidine (MNNG) for 7 mo (av dose 6.9 mg/day) and the other receiving no carcinogen. Autopsy was performed 56 wk after surgery in a total of 209 surviving animals. The results indicated that surgical trauma alone did not influence the incidence of gastric tumors. However, tumor incidence rose in parallel with intensity of duodenogastric reflux. No tumors occurred in any of the carcinogen-treated or untreated rats that had undergone Billroth II resection with Roux-en-Y gastroenterostomy, a procedure which produces no reflux. Tumor incidence rose to 13.6% in MNNG-treated rats that had received Billroth I resection and to 10% in untreated rats undergoing the same procedure. Carcinogen-treated and untreated animals receiving Billroth II resection with Braun's anastomosis had tumor incidence of 16.7% and 23.1%, respectively; those with Billroth II resection alone had incidence of 38.9% and 30%, respectively. The highest incidence occurred in rats subjected to gastroenterostomy alone (50% with and 70.8% without MNNG treatment). Among the 29 animals with duodenogastric fistulae, 25 (14/15 carcinogen-treated and 11/14 untreated) eventually developed carcinomas in the gastric part of the fistula. The carcinogenic potential of MNNG appeared markedly lower than that of duodenogastric reflux provoked by resection. Results support the hypothesis that biliary reflux favors development of gastric malignancy; techniques for gastric resection which eliminate reflux are evidently superior. (11 Refs)

84. ALKALINE PHOSPHATASE ISOZYMES FROM RAT TRANSPLANTABLE GASTRIC CARCINOMA TISSUES INDUCED BY N-METHYL-N'-NITRO-N-NITROSOGUANIDINE (MEETING ABSTRACT).

Miki K, Kobori O, Ichinose M, Miyazaki J, Iino S, Niwa H, Suzuki H, Oka H, Oda T
1st Department of Internal Medicine, University of Tokyo, Tokyo, Japan
Oncodev Biol Med; AbstractsBook,1:P11 1981

Experimental gastric carcinoma was developed in inbred Wistar strain rats by oral administration of N-methyl-N'-nitro-N-nitrosoguanidine, and the resulting tumor was transplanted sc into rats of the same strain. Alkaline phosphatase (ALP) isozymes were determined in these transplantable tumor tissues, and their enzymological and immunological characterizations were analyzed. They did not differ significantly until the 19th generation and were almost the same as those of primary tumors in out-bred rats; the carcinoma tissues of rat stomach were suspected of producing high amounts of ALP isozymes (major A-band and minor B-band), especially the intestinal-type ALP isozyme (B-band). Therefore, abnormal gene expression in ALP production, especially intestinal-type ALP, seemed to be independent of the strain of rats and inherited in transplantable tumor until the 19th generation. However, after the 20th generation, specific ALP activity gradually decreased and zymogram showed almost only A-band (non-intestinal-type ALP). We propose that experimentally induced rat gastric cancer cells, initially or precancerous condition, produce the A-type of ALP isozyme, finally, as cancer cells develop, they produce the B-type, and ultimately, A plus A-type isozyme appear in the carcinoma tissues. After the 20th generation, ALP isozymes from rat transplantable tumor tissue become similar to ALP isozymes of the precancerous condition. (2 Refs)

85. COMPARATIVE STUDIES ON THE PRODUCTION OF STOMACH TUMORS FOLLOWING THE INTUBATION OF SEVERAL DOSES OF N-METHYL-N'-NITRO-N-NITROSOGUANIDINE IN GERM-FREE AND CONVENTIONAL NEWBORN RATS.

Sumi Y, Miyakawa M

Lab. Germfree Life Res., Nagoya Univ. Sch. Medicine, 65 Tsuruami-cho, Showa-ku, Nagoya 466, Japan

Gan; 72(5):700-704 1981

The present work was undertaken to investigate the possible role of microflora in gastric tumorigenesis by the comparison of tumor production between germ-free and conventional male Wistar rats given the same amount of N-methyl-N'-nitro-N-nitrosoguanidine into the stomach by catheter during the newborn period. Only 29% of germ-free rats treated with 450 ug/animal that were killed 300 days after the first intubation had tumors in the stomach, whereas 93% of conventional similarly treated rats had such tumors at the same period, suggesting that the microflora might exert a promoting influence upon stomach tumor production. (Author abstract) (27 Refs)

86. EFFECT OF ANTIBIOTICS ON INCIDENCE OF RAT INTESTINAL TUMORS INDUCED BY 1,2-DIMETHYLHYDRAZINE DIHYDROCHLORIDE.

Goldin BR, Gorbach SL

Infectious Disease Service, Dept. Medicine, New England Medical Center Hosp., Tufts Univ. Sch. Medicine, 171 Harrison Ave., Boston, MA, 02111

JNCI; 67(4):877-880 1981

The intestinal microflora has been shown to influence the induction of chemical carcinogens responsible for intestinal tumors in animal models. For further exploration of this issue, male inbred F344 rats were administered a chemical carcinogen, 1,2-dimethylhydrazine dihydrochloride (DMH), for 20 wk, along with oral antibiotics, either tetracycline or erythromycin, to suppress the intestinal flora. Colon cancer incidence was lower in animals receiving antibiotics; 22% of the erythromycin-treated rats and 20% of the tetracycline-treated rats had colon tumors compared to untreated controls with a 74% tumor incidence (p less than 0.002). Tumors in the small intestine also decreased from an incidence of 48% in the control animals to an incidence of 27 and 7%, respectively, for the erythromycin- and tetracycline-treated rats. These findings suggested that the metabolic activity of the intestinal flora is related to cancer induction by DMH. (Author abstract) (23 Refs)

87. CANCER INDUCTION IN MICE WITH ACETALDEHYDE METHYLFORMYLHYDRAZONE OF THE FALSE MOREL MUSHROOM.

Toth B, Smith JW, Patil KD

Eppley Inst. Res. in Cancer and Allied Diseases, Univ. Nebraska Medical Center, Omaha, NE, 68105

JNCI; 67(4):881-887 1981

Acetaldehyde methylformylhydrazone (AMFH), which occurs up to 0.3% in one of the edible false morel mushrooms, Gyromitra esculenta, was administered to noninbred Swiss mice in propylene glycol in 52 weekly intragastric instillations as 100 ug/g body wt. The treatment induced tumors of the lungs, preputial glands, forestomach, and clitoral glands. The tumor incidences in these four tissues in treated females were 70, 0, 16, and 12%, respectively, whereas in the treated males they were 40, 90, 0, and 0%. The corresponding tumor incidences in the solvent control females were 26, 0, 0, and 0%, whereas in the solvent control males they were 22, 0, 0, and 9%, respectively. Histopathologically, the neoplasms were classified as adenomas and adenocarcinomas of the lungs; squamous cell papillomas and carcinomas, adenocarcinomas, undifferentiated carcinomas, angiosarcomas, and fibrosarcomas of the preputial glands; squamous cell papillomas and carcinomas of the forestomach; and squamous cell papillomas and carcinomas and keratoacanthomas of the clitoral glands. The study thus proves for the first time the tumorigenicity of AMFH. In view of these and earlier findings, the human population should abstain from consumption of Gyromitra esculenta. (Author abstract) (21 Refs)

88. INTEGRATION OF HEPATITIS B VIRUS DNA INTO THE GENOME OF LIVER CELLS IN CHRONIC LIVER DISEASE AND HEPATOCELLULAR CARCINOMA. STUDIES IN PERCUTANEOUS LIVER BIOPSIES AND POST-MORTEM TISSUE SPECIMENS.

Shafritz DA, Shouval D, Sherman HI, Hadziyannis SJ, Kew MC

Dept. Medicine, Liver Res. Center, Albert Einstein Coll. Medicine, 1300 Morris Park Ave., Bronx, NY, 10461

N Engl J Med; 305(18):1067-1073 1981

Recombinant-DNA technology combined with gel electrophoresis was used to find hepatitis B virus DNA (HBV-DNA) in liver and tumor tissue from patients with hepatocellular carcinoma and chronic liver disease, and to study integration of HBV-DNA into the genome of the tissue cells. HBV-DNA analysis was performed on hepatocellular carcinomas from 20 patients, all of whom had at least one serological marker indicating intercurrent or previous HBV infection. Twelve patients whose sera were positive for hepatitis B surface antigen (HBsAg) had integrated HBV-DNA in the tumor; 3/8 who were HBsAg negative but positive for antibody to HBsAg (anti-HBs) also had HBV-DNA integration. Five patients who were HBsAg negative but anti-HBs positive had no detectable HBV-DNA in their tumors. In some patients integrated HBV-DNA was also found in nontumorous liver tissue with the same or different hybridization pattern from that of tumor. In five HBsAg carriers with evidence of the carrier state and chronic liver disease for less than 2 yr, HBV-DNA was present but not integrated in liver tissue. In two patients who carried HBsAg for greater than 8 yr, HBV-DNA was integrated into the host genome. The studies suggest that integration of HBV-DNA into hepatocytes occurs during the course of persistent hepatitis B virus infection and precedes development of gross neoplasm. (22 Refs)

89. STUDY OF KILLING EFFECT OF RUBESCENSIN A AND B ON HUMAN LIVER CANCER CELL LINE BEL-7402.

Ge M, Ma Y, Zhang Z, Ma A, Liu H
Henan Cancer Inst., Henan Province, People's Republic of China
Yaoxue Tongbao; 16(5):6-9 1981

Rabdosia rubescens Hemsl, a plant widely distributed in China, has been recently demonstrated to be active against esophageal cancer. Its water and alcohol extracts have also shown significant cytotoxic effects on in vitro cancer cells (Hela cells and esophageal cancer) as well as animal tumors. The cytotoxic effects of its active principles (Rubescensin A and B) on a human hepatoma cell line (BEL-7402) are described and compared to those of 5-fluorouracil (5-FU). Results showed that both Rubescensin A and B had inhibitory effects on cell division, cell survival, cell proliferation and 3H-thymidine incorporation in BEL-7402 cells. Their effects were similar and dose-dependent and were generally stronger than those of 5-FU. The cell killing effects of Rubescensin A and B were about 2x those of 5-FU; the action of the former was rapid while that of the latter was delayed. This suggests that a combination of Rubescensin A and B and 5-FU would be more beneficial in cancer therapy and should be tested. (5 Refs) (In CHI)

90. PURIFICATION OF SPECIFIC ANTIBODY TO ALPHA-FOETOPROTEIN AND ITS IMMUNOLOGICAL EFFECT ON CANCER CELLS.

Hirai H, Tsukada Y, Hara A, Hibi N, Nishi S, Wepsic HT, Koji T, Ishii N
Dept. Biochemistry, Hokkaido Univ. Sch. Med., Sapporo, Japan
J Chromatogr; 215:195-210 1981

Human or rat alpha-fetoprotein (AFP) was highly purified from ascitic fluid or serum of hepatoma bearers. The purification was carried out mainly by means of immunoadsorbent chromatography using Sepharose coupled to specific anti-AFP antibody with BrCN activation, and by Sephadex gel filtration. Horses were immunized with the purified AFP and the specific antibody was isolated from the antiserum by means of an immunoadsorbent coupled to purified AFP. The specific antibody was found to bind specifically with AFP-producing tumor cells. The antibody was applied for radio immunodetection of the tumor. 125I-labeled antibody was administered to patients or rats with hepatoma, and radioactivity localized in the tumors was scintiscanned with a scintillation camera. In this way, the location of the tumor was detected in about 50% of the hepatoma bearers. The cytotoxicity of the antibody was clearly demonstrated both in vitro and in vivo in animal experiments. The antibody was administered to patients with advanced hepatoma. Although no improvement of the disease was demonstrated, serum AFP levels decreased greatly and in some cases l ow AFP levels were maintained for long periods suggesting that the antibody suppressed AFP-producing hepatoma cells. No significant side effects were observed in patients who had been administered with the horse antibody. (Author abstract) (10 Refs)

91. STRUCTURALLY DIVERSE HEPATOCARCINOGENS IN VITRO INDUCE DRUG RESISTANCE IN RAT HEPATOCYTES WHEN TESTED IN VITRO (MEETING ABSTRACT).

Carr BI
Department of Medical Oncology, City of Hope National Medical Center, Duarte, CA, 91010
Br J Cancer; 43(5):731 1981

Carcinogen-altered cells have generally been shown to be more resistant to the toxic effects of carcinogens than normal cells. It was therefore reasoned that the marked resistance of human hepatocellular carcinoma to cytotoxic chemotherapy might also be due to a carcinogen-induced phenotypic change in hepatocytes, resulting in an increased resistance to both carcinogen- and chemotherapy-mediated cytotoxicity. Male F344 rats were fed a basal diet and given aflatoxin B1 (AFB1) 30 ug daily ip or a basal diet containing either ethionine or 3'-methyl-4-dimethylaminoazobenzene. Rats were sacrificed weekly and their hepatocytes were placed in primary monolayer culture. Following a 3 hr attachment hepatocytes were exposed for 24 hr to Adriamycin (1.8x10-4M) cycloheximide (7x10-3M) or AFB1 (10-6M). Resistance was defined as the percentage of attached cells excluding trypan blue compared to untreated controls. Each of the 3 carcinogens induced greater than 50% resistance to AFB1 in the isolated hepatocytes after one wk, and comparable resistance to cycloheximide and Adriamycin after 4 wk. Hepatocytes from normal rats did not survive these concentrations of test drugs. In vivo, 3 different hepatocarcinogens induced marked resistance in rat hepatocytes to the potent carcinogen AFB1, as well as to the cytotoxic drug Adriamycin, using an in vitro assay, several mo before the appearance of hepatocellular carcinoma. Clinical drug resistance may be an early carcinogen-induced phenotype in primary tumors. (3 Refs)

92. INITIATION/PROMOTION ASSAY FOR CHEMICAL CARCINOGENS IN RAT LIVER (MEETING ABSTRACT).

Pereira MA, Herren SL, Britt AL, Khoury M
Health Effects Research Laboratory, US Environmental Protection Agency, Cincinnati, OH, 45268
Toxicologist; 1(1):155 1981

We have developed a short-term initiation/promotion assay in rat liver for the detection of chemical carcinogens. Male rats (175-200 gm) were po administered the chemical under test. One wk later tumor promotion by 500 ppm sodium phenobarbital in the drinking water was commenced. After 8 wk of promotion the rats were sacrificed and the liver stained and scored for gamma glutamyl transpeptidase (GGTase) positive foci. The appearance of GGTase positive foci was taken as an indication of the initiation of carcinogenesis by the chemical. In some cases partial hepatectomy was performed 24 hr prior to the administration of the test chemical in an attempt to increase the sensitivity of the assay. Acetylaminofluorene (AAF), aflatoxin B1 (AFB1) benzo(a)pyrene (BaP), diethylnitrosamine (DENA), 7,12-dimethylbenzo(a)anthracene (DMBA), dimethylnitrosamine (DMNA), N-methyl-N'-nitro-N-nitrosoguaninidine and urethane were positive in the assay while benzene (30 mmole/kg) was apparently negative. Phenobarbital promoted the response of AAF, AFB, DENA, DMBA and DMNA. Partial hepatectomy 24 hr prior to initiation increased the response of AAF, BaP, DENA and DMBA. The initiation/promotion assay in rat liver that includes 1) partial hepatectomy at 24 hr prior to administering the test chemical, 2) phenobarbital promotion and 3) GGTase foci as indication of carcinogenic activity; would appear to be sensitive to a wide variety of chemical carcinogens. (no Refs)

93. HUMAN CELL OF LINE PANCREATIC ADENOCARCINOMA (MEETING ABSTRACT).

Moore GE, Gordon SG, Lewis B, Morgan RT, Semple TU, Woods LK
Department of Surgery, Division of Surgical Oncology, Denver General Hospital, Denver, CO, 80204
Newsletter Natl Pancreas Cancer Project; VI(2):41 1981

A continuous cell line LVP-BL was established from a liver metastasis in a 36 yr old white male patient with adenocarcinoma of the pancreas. LVP-BL grew in small tight colonies of pleomorphic epitheloid cells adherent to the culture vessel in either RPMI 1640 medium or GEM 1717 medium supplemented with 5% to 20% heat-inactivated fetal bovine serum and antibiotics. LVP-BL was tested for growth in GEM 1717 medium base supplemented with 10% Hespan (Hetastarch 1.2% vol/vol) and cellular viability and typical cellular morphology were maintained for up to 14 days. LVP-BL (10(6) viable cells/5 ml serum-free medium) secreted elastase (2.09 ug/ml), trypsin (0.36 ug/ml) but no chymotrypsin. No carcinoembryonic antigen or adrenocorticotropic hormone production were detected. LVP-BL cells did not possess receptor proteins for estrogen, progesterone, androgen, or dexamethasone. Five allozymes were assayed. Ultramorphology studies by transmission electron microscopy revealed immature reticulated nucleoli with randomly scattered chromatin in the nuclei. The cytoplasm contained few tonofibrils, extensive rough endoplasmic reticulum, numerous glycogen vacuoles, abnormal mitochondria and sparce desmosomes. The periphery of individual cells had sparce random microvilli. Cytogenetic analyses showed the number of chromosomes per metaphase ranged from 47 to 90. Marker chromosomes were identified. LVP-BL has been in continuous culture for over 2 yr and is available to other investigators for their studies. (no Refs)

94. ESTABLISHMENT AND CHARACTERIZATION OF PRIMARY AND METASTATIC HUMAN PANCREATIC ADENOCARCINOMA CELL LINES (MEETING ABSTRACT).

Nowak NJ, Chen WH, Loor RM, Chu TM
Roswell Park Memorial Institute, Buffalo, NY
Newsletter Nat' Pancreas Cancer Project; VI(2):44 1981

Two human pancreatic tumor cell lines have been established from (1) biopsy specimen of a primary adenocarcinoma of the body of the pancreas (BxPC-3), and (2) malignant ascites of an adenocarcinoma of the head of the pancreas (AsPC-1). The biopsy specimen provided epithelial tumor cell colonies in culture which were isolated by needle micromanipulation. Ascitic cells produced epithelioid tumor cell colonies which were similarly isolated by mechanical means in primary cultures. Tumorigenicity of the cell lines was confirmed by xenografts in nude mice. The pancreatic tumor epithelial cells exhibited morphological characteristics of forming a confluent monolayer with tight adhesion to the culture flask surface and with free-floating cells in the media. Re-establishment of tumor xenografts in tissue culture revealed growth and morphological characteristics identical to those of original cultures. Histologically the tumors grown in nude mice exhibited prototypic characteristics of primary adenocarcinoma in the patients, producing mucin and displaying a wide range of glandular differentiation, which ranged from well to poorly differentiated adenocarcinomas with occasionally localized lymphocytic infiltrations. Chromosomal analysis and isoenzyme (glucose-6-phosphate dehydrogenase) determination demonstrated that these cell lines were of human origin, and devoid of HeLa cell contamination. These tumor lines have been cultured for at least 20 passages in vitro and 5 in vivo. Establishment of the primary and metastatic human pancreatic cell lines represented a valuable research resource for human pancreatic cancer. (no Refs)

95. ADENOCARCINOMA OF THE HUMAN EXOCRINE PANCREAS: PRESENCE OF SECRETIN AND CAERULEIN RECEPTORS.

Estival A, Clemente F, Ribet A

INSERM U 151 - CHU Rangueil Bat L3, 31054 Toulouse Cedex, France

Biochem Biophys Res Commun; 102(4):1336-1341 1981

The nucleotide response of a human pancreatic adenocarcinoma transplanted in athymic nude mice was examined after stimulation with cerulein (CR) and secretin. Secretin (10(-6) M) increased the cyclic AMP level in the cancer cells, with a half-maximal response obtained at a concentration of 3 x 10(-7) M. CR increased the cyclic GMP level without affecting the cyclic AMP level. The CR concentration necessary to obtain a half-maximal response was approx 5 x 10(-11) M. The kinetics of the cyclic AMP and cyclic GMP responses were similar. The maximal nucleotide concentration was found at approx 3 min and never increased to greater than 2x the basal value, in spite of the presence of phosphodiesterase inhibitors. These results demonstrate the existence of secretin and CR receptors in adenocarcinoma of the human exocrine p ancreas. (15 Refs)

96. ANTIGEN (AG) PRODUCTION BY HUMAN PANCREATIC CANCER CELLS IN ARTIFICIAL CAPILLARY CULTURE (MEETING ABSTRACT).

Maimonis PJ, Meitner PA, LaPosta-Frazier N, Calabresi P, Turner MD

Brown University/Roger Williams General Hospital Cancer Center, Providence, RI, 02908

Newsletter Natl Pancreas Cancer Project; VI(2):37 1981

We have successfully cultured several human pancreatic cancer cell lines on Amicon Vitafiber bundles. Three different types of tumor (adenocarcinoma, anaplastic carcinoma and mucoepidermoid carcinoma) grow equally well in the 'Extra-capillary Space' (ECS). Glucose is consumed exponentially until the capillary bundle is surrounded by a confluent mass of cells; thereafter, sustained glucose consumption appears to indicate viability. The cultures can be maintained for 7 wk. Ag and other cell products can be conveniently collected from the ECS throughout the period of culture. Two cell lines, COLO 357 and RWP 2, released carcinoembryonic antigen (CEA) into the ECS fluid. Three rabbits were immunized with ECS fluid from a culture of COLO 357. The sera before absorption, gave precipitin reactions in immunodiffusion (ID) against fetal calf serum and normal pancreas. After absorption with these Ags the sera gave positive reactions on indirect immunofluorescence (IF) with frozen human pancreatic cancer cell lines, RWP 1 and RWP 2. The absorbed antisera showed no reaction of IF against two human colonic and one human breast cancer cell line and no reaction of ID against CEA, A substance and Pancreatic Oncofetal Antigen. On IF with our antiserum, COLO 357 showed evidence of cellular heterogeneity: one type cell showed overall fluorescence, another membrane fluorescence and a third type no fluorescence. Experiments are in progress to isolate and characterize the cellular antigens. (no Refs)

97. VARIATION IN ENZYMES AND DRUG SENSITIVITIES AMONG HUMAN PANCREATIC CANCER CELL LINES (MEETING ABSTRACT).

Meitner PA, Kajiji SM, LaPosta-Frazier N, Dexter DL, Calabresi P, Turner MD
Brown University/Roger Williams General Hospital Cancer Center, Providence, RI, 02908
Newsletter Natl Pancreas Cancer Project; VI(2):39 1981

We have growing in our laboratory two newly established adenocarcinomata (RWP 1 and RWP 2) COLO 357 and MIA PaCa 2 in monolayer and capillary culture. RWP 1, RWP 2, COLO 357 and mucoepidermoid carcinoma (RWP 4) are tumorigenic and are being propagated as transplantable xenografts in nude mice. RWP 1, RWP 2, RWP 4 and COLO 357 form colones in 0.102% agar and some of these have been isolated and characterized. Cell lines have been screened for enzymes involved in normal pancreatic function and for some common intracellular enzymes. All of the adenocarcinomata contain carbonic anhydrase, probably a reflection of their ductal origin, however, none of the lines tested so far contains or secretes appreciable amounts of trypsin, chymotrypsin, their zymogens or amylase. Most lines have measurable levels of lactic dehydrogenase (LDH), glucose-6-phosphate dehydrogenase (G-6-PD) and alkaline phosphatase (ALP) (RWP 1:LDH 597 mU/mg protein, G-6-PD 29.8 mU/mg p, ALP 3.8 mU/mg p; RWP 2:LDH 710 mU/mg p, G-6-PD 58.7 mU/mg p, ALP 10.0 mU/mg p; COLO 357:LDH 612 mU/mg p, ALP 26.4 mU/mg p). RWP 1, RWP 2, COLO 357 and MI PaCa 2 have been tested against 5-fluorouracil, semustine, actinomycin D, methotrexate, mitomycin C, adriamycin and daunorubicin in vitro; all ID50s were lower than 2.5 x 10(-5) and in vivo studies with xenografted tumors in nude mice are planned. We have a broad spectrum of cell lines which are useful for the study of human pancreatic cancer and we have been successful in cloning some of these lines. We are currently studying their metabolic function and sensitivities to drugs. (1 Ref)

98. CHARACTERIZATION OF BENZOPYRENE HYDROXYLASE ENZYME ACTIVITY IN RAT PANCREAS (MEETING ABSTRACT).

Black O
Medical Research Service, Veterans Administration Medical Center, Augusta, GA, 30912
Newsletter Natl Pancreas Cancer Project; VI(2):11 1981

The increasing incidence of pancreatic cancer, the growing environmental pollution problems, and our increased knowledge of interactions of various exogenous factors such as diet, sex, etc, heightens the need for information on etiology of pancreatic cancer. There are presently several models of carcinogen-induced cancer. Establishment of the capability of tissue to form active intermediates is necessary to establish a relationship between exposure to carcinogens and subsequent tumorigenic response. The present studies were undertaken to characterize the pancreatic metabolic system, specifically that which metabolizes the ubiquitous carcinogen, benzopyrene (BP). We determined the Km and Vmax of the BP hydroxylase enzyme reaction in male Sprague Dawley rats pretreated with 20 mg/kg 3-methylcholanthrene (3MC), 75 mg/kg phenobarbital (PB), or solvent as control. Type of cytochrome involved was examined by measuring the reaction in the presence of 7,8-benzoflavone (BF), an inhibitor of the cytochrome P-448-related enzyme activity. The data indicated that the enzyme activity was induced by pretreatment with PB but not with 3MC. These pretreatment protocols resulted in changes both in Km and Vmax. Studies with BF suggested that pancreatic tissue contained only one hemoprotein and point out species differences between the rat and guinea pig. These studies confirm the pancreatic capability to metabolize procarcinogens and to further degrade carcinogenic metabolites, and strengthens the role of carcinogen exposure in the etiology of pancreatic cancer. (no Refs)

99. CARCINOGEN SECRETION INTO THE DUODENUM AND PANCREATIC JUICE OF DOGS DURING FASTING AND POSTPRANDIALLY (MEETING ABSTRACT).

DiMagno EP, Demol P, Molenaar K, Go VL, Dozois RR
Gastroenterology Unit, Mayo Clinic, Rochester, MN, 55905
Newsletter Natl Pancreas Cancer Project; VI(2):19 1981

Fasting pancreaticobiliary secretions are cyclical, related to interdigestive motor activity and during peak rates approx 50% postprandial secretory responses. To determine if carcinogen secretion into pancreatic juice and the duodenum follows this pattern, four dogs were provided with three permanent indwelling duodenal catheters to perfuse 3H-polyethylene glycol (PEG), record duodenal pressures and collect duodenal samples for analysis of 14C, 3H, trypsin and bile acids. Two dogs were also provided with pancreaticocutaneous catheters to collect pancreatic juice. At the beginning of phase I, 50 uCi of 14C-1,2 benzanthracene was injected iv as a bolus. After three interdigestive motor-secretory cycles the dogs were fed 430 g of liver and samples obtained for four hr. We found: 1) 14C secretion (polar metabolites of benzanthracene by thin-layer chromatography and ultracentrifugation) into the duodenum during fasting was related to the interdigestive motor-secretory cycle. Thirty-five per cent of the injected dose was secreted during the interdigestive motor-secretory cycles (82% during phase II); 2) postprandially, 15% of 14C was secreted during 4 hr and most was secreted during the first hr (62%); and 3) a constant fraction (.03-.05%) of 14C recovered in duodenal samples was derived from pancreatic secretion. Thus, after a single brief exposure to a carcinogen, more than 50% of it (most in bile but small amounts in pancreatic juice) is secreted into the upper gastrointestinal tract as polar metabolites at variable rates in conjunction with the interdigestive motor-secretory complex and feeding. (no Refs)

100. PANCREATIC CANCER GROWTH STIMULATION BY CAERULEIN AND SECRETIN (MEETING ABSTRACT).

Townsend CM, Franklin RB, Watson LC, Glass EJ, Thompson JC
Department of Surgery, University of Texas Medical Branch, Galveston, TX, 77550
Newsletter Natl Pancreas Cancer Project; VI(2):59 1981

Caerulein (C), alone, or in combination with secretin (S) produces hyperplasia of the normal rat pancreas. The effects of these hormones on pancreatic ductal cancer (as well as normal hamster pancreas) are unknown. The purpose of this study was to determine whether pancreatic trophic hormones stimulate growth of pancreatic ductal cancer in Syrian golden hamsters. We used a tissue culture cell line of hamster pancreatic ductal cancer developed in our laboratory. Groups of 8 male hamsters were inoculated with 5x10(5) cells into the left cheek pouches. After 7 days of tumor growth, treatment was begun with 0.15 M NaCl for controls (CON), and with either C (15 ug/kg/day) or S (75 ug/kg/day), or a combination of C + S. Divided daily doses were given by ip injection (0.5 ml) every 8 hr for 15 or 20 days. At sacrifice, tumors (T) and normal pancreas (P) were excised, weighed, and the DNA content determined. Trophic hormones for normal hamster pancreas appear to stimulate growth of pancreatic cancer. To our knowledge, this is the first demonstrated endocrine stimulation of pancreatic ductal carcinoma. (no Refs)

101. BIOCHEMICAL BASIS OF ACTION OF PHORBOL ESTERS ON PANCREATIC ACINAR CELLS: A NEW MECHANISM FOR STIMULATING SECRETION (MEETING ABSTRACT).

Jensen RT, Lemp GF, Gardner JD
National Institutes of Health, Bethesda, MD, 20205
Gastroenterology; 80(5,part2):1184 1981

TPA (12-O-tetradecanoyl-phorbol-13-acetate) is a potent tumor-promoting agent extracted from croton oil. In the present studies we examined the biochemical basis of action of TPA on dispersed acini from guinea pig pancreas. TPA caused a 20-fold increase in amylase secretion and was 70 percent more efficacious than a maximally effective concentration of cholecystokinin (CCK). Detectable stimulation of amylase secretion occurred with 3nM TPA, half-maximal stimulation with 0.1 uM and maximal with 30uM. The action of TPA on enzyme secretion was not altered by secretagogues that cause mobilization of cellular calcium (CCK, carbachol, bombesin, A23187) but was potentiated by secretagogues that increase cellular cyclic AMP (vasoactive intestinal peptide, secretin). TPA, however, did stimulate calcium uptake by pancreatic acini and the dose-response curve for stimulation of calcium uptake was the same as that for stimulation of enzyme secretion. These results indicate that the actions, of TPA on pancreatic acini are unique in two respects: 1) TPA is the most effective pancreatic secretagogue examined to date; 2) although the action of TPA is calcium-mediated, TPA acts by increasing the inward movement of calcium into acinar cells, not by causing mobilization of intracellular calcium. Furthermore, the close correlation between the relative abilities of phorbol esters to stimulate pancreatic enzyme secretion and the abilities of these agents to promote carcinogenesis suggests that these two effects may be caused by a common calcium-mediated mechanism. (no Refs)

102. TISSUE AND SPECIES DIFFERENCES IN THE ABILITY OF THE PANCREATIC CARCINOGEN N-NITROSOBIS(2-OXYPROPYL)AMINE (BOP) TO INDUCE DNA DAMAGE (MEETING ABSTRACT).

Lawson T
Eppley Institute for Research in Cancer, University of Nebraska Medical Center, Omaha, NE, 68105
Newsletter Natl Pancreas Cancer Project; VI(2):32 1981

The production of DNA damage is a measure of a carcinogen's ability to induce potentially mutagenic and carcinogenic lesions in DNA. The ability of the carcinogen BOP to produce such lesions has been compared in target and non-target tissues of Syrian hamsters and MRC rats. In hamsters, BOP' s carcinogenicity was dose-dependent, producing only pancreatic tumors at lower doses and also liver tumors at higher doses. In rats, BOP's carcinogenicity depended on the route of administration, and resulted in liver and colo-rectal tumors when given sc and prostate tumors when given po. Extensive DNA damage was produced in hamsters by 10 mg BOP/kg in the pancreas (target tissue) and the liver and salivary gland (non-target tissues). BOP persisted longer in the pancreas. At higher doses (20 and 40 mg/kg) persistance of damage was also seen in the liver. For the DNA damage in the pancreas there was an impressive dose response and a close correlation with the carcinogenicity of BOP. In rats, no DNA damage was seen in the pancreas (non-target tissue). The tissues in which BOP is a carcinogen all exhibited extensive and persistent DNA damage (liver, colon and prostate). These studies are being complemented by examinations of the in vivo metabolism of BOP and the nature and extent of alkylation produced. These results indicate that a potent carcinogen such as BOP is capable of producing potentially carcinogenic lesions in a variety of tissues, but that the subsequent carcinogenicity depends on one or more other factors, such as the capacity to produce a mitogenic response which will stimulate the tissue to cell division to 'lock in' the carcinogenic lesion. (no Refs)

☆ U. S. GOVERNMENT PRINTING OFFICE : 1982—361-847/113

AUTHOR INDEX WITH CITATION NUMBERS

Adson MA 18
Aiso S 9
Akahonai Y 45
Akao T 20
Akiyama H 53
Allan BJ 40
Almiranez CE 1
Amiguet JA 21
Anderson N 35
Anfang C 38
Aoki K 77
Asakura H 9
Atkinson M 65
Atkinson M 66
Avagnina S 63
Balistreri WF 36
Balzola F 63
Bank S 38
Beauchamp Y 75
Benini L 32
Benini P 32
Bennetts RW 69
Berjian R 46
Berruti GM 54
Bianco L 63
Black O 98
Bloom SR 29
Bourgeois N 68
Boyce HW 64
Branicki FJ 65
Brinkley D 8
Britt AL 92
Brocco G 32
Bryant MG 29
Buch P 38
Buffa R 12
Bunte H 83
Cain GD 67
Calabresi P 96
Calabresi P 97
Campagnari T 49
Capella C 12
Carr BI 91
Cartmill AM 62
Cassidy DC 64
Castro JR 57
Cavallini G 32
Chapman PH 26
Chen GT 57
Chen WH 94
Chu TM 46
Chu TM 94
Chuang VP 4
Clemente F 95
Cobb LM 62
Colombo M 43
Colucci G 43
Concetti HF 13
Conchillo F 21
Correa P 41
Correa P 73
Cremer M 6
Cremer M 68
Cremer M 7
Critchley M 61
Cuello C 41
Daasch VN 48
Dasmahapatra K 51
Dawson JL 8
De Cosse J 60
De Franchis R 43
De Toeuf J 7
Demol P 99
Dexter DL 97
DiMagno EP 99
Dionigi P 33
Dionigi R 33
Dobbs SM 67
Domeniconi D 63
Douglass HO 46
Douglass HO 49
Douglass HO 51
Dozois RR 99
Dronfield MW 66
Dunham F 6
Dunham F 68
Dunham F 7
Eide JT 17
Eisenburg J 71
El-Salhy M 30
Engelholm L 6
Estival A 95
Fabian JS 64
Falchuk KR 41
Farnell MB 18
Ferguson R 66
Fillipa D 60
Fiocca R 12
Fontham ET 73
Franklin RB 100
Freni SC 76
Freni-Titulaer 76
Frigerio B 12
Fritsche HA 25
Fujimoto S 20
Furukawa R 22
Furuta S 47
Gardner JD 101
Ge M 89
Gilsdorf RB 62
Glass EJ 100
Go VL 99
Goggi D 33
Goldin BR 86
Goldrosen MH 49
Goldrosen MH 51
Gorbach SL 86
Gordon SG 93
Graham DY 67
Grime S 61
Grivet L 63
Hada T 24
Hadziyannis SJ 88
Hara A 90
Harington JS 79
Harvey RF 32
Hattori T 52
Hattori T 82
Haukland HH 17
Haynie TP 69
Heger RA 83
Heitz PU 28
Henson DW 36
Herren SL 92
Herrera L 51
Hewitt LA 35
Hibi N 90
Hibi T 9
Higashino K 24
Hirai H 90
Ho JC 44
Hohenstein J 83
Homma T 47
Honegger H 35
Hostetler C 37
Howell JH 49
Ichikawa K 14
Ichinose M 84
Iino S 84
Inaba Y 78
Inaji H 46
Ishigami H 20
Ishii N 22
Ishii N 90
James FW 26
Jass JR 15
Jeanmart J 68
Jensen RT 101
Jiang S 70
Johnson JA 17
Johnson WD 73
Kahanowitz C 3
Kajiji SM 97
Kamei H 14
Kaneko H 50
Kapp F 42
Kato Y 13
Kaushik M 37
Kawa S 47
Kawamura T 53
Kew MC 88
Khoury M 92
Kissane JM 72
Kitagawa T 13
Kitsukawa Y 20
Kiyoshima K 10
Kloppel G 28
Kobayashi K 9
Kobori O 84
Kohno H 52
Koji T 22
Koji T 90
Kojima T 14
Kondo T 14
Kono K 22
Kothari T 19
Kranz V 38
Kumakura K 9

Kuriyama M 46
Kusumoto Y 22
LaPosta-Frazier 96
LaPosta-Frazier 97
Langhans P 83
Laws J 8
Lawson T 102
Layne EA 37
Lee DC 1
Lemp GF 101
Lendvai S 38
Lewis B 93
Lightdale C 60
Lipman TO 37
Liso P 21
Liu H 89
Livstone EM 56
Long RG 29
Loor R 46
Loor RM 94
Loyaza M 42
Lyman J 57
Ma A 89
Ma Y 89
Macklon AF 26
Maimonis PJ 96
Mak TK 44
Manaligod JR 11
Mangla JC 19
Manzo ML 46
Mazari S 33
Meitner PA 96
Meitner PA 97
Mellow MH 37
Metzgar RS 48
Miki K 84
Minami T 20
Miura S 9
Miyakawa M 85
Miyazaki J 84
Miyazaki M 20
Molenaar K 99
Mooney B 61
Moore GE 93
Moran D 41
Morgan RT 93
Morishita T 9
Munehisa T 22
Munoz M 21
Muro T 22
Nagashima H 23
Nagata A 47
Nagataki S 22
Nakanishi K 52
Nakata K 22
Nelson RS 16
Nicolai JJ 46
Nishi S 90
Nishimawari K 82
Niwa H 84
Noguera EC 42
Nord HJ 64
Nosoh Y 82
Nowak NJ 94
Nunnerley H 8
O'Morchoe PJ 1
Oberg K 27
Oda T 84
Ogilvie AL 65
Ogilvie AL 66
Oguchi H 47
Ohno Y 77
Oka H 84
Okui K 20
Ono Y 53
Palmo A 63
Parl F 74
Patil KD 87
Pavesi F 33
Pearson JG 58
Pereira MA 92
Peters TC 57
Philippakos D 42
Pitchumoni CS 74
Pitluck SA 57
Piubello W 32
Polak JM 28
Polak JM 29
Prieto J 21
Primignani M 43
Quivey JM 57
Ramella A 63
Rawlins MD 26
Renner IG 34
Ribet A 95
Rinderknecht H 34
Ring EJ 55
Rios-Dalenz J 36
Rosato EF 55
Sabbatini M 54
Saunders WM 57
Sawai K 5
Schilling JJ 40
Schlake W 83
Schwartz JT 67
Scuro LA 32
Semple TU 93
Sessa F 12
Shafritz DA 88
Sherlock P 60
Sherman HI 88
Shimano T 46
Shivshanker K 16
Shivshanker K 4
Shivshanker K 69
Shouval D 88
Shu YJ 2
Simard A 75
Skinner JM 39
Smale BF 55
Smith JC 37
Smith JW 87
Smithies A 42
Solcia E 12
Soloway RD 36
Soo CS 4
Spjut HJ 59
Stablein DM 56
Stacher HG 42
Staub JJ 28
Stroehlein JR 16
Stroehlein JR 4
Sugano H 13
Sugimoto K 14
Sugino Y 9
Sumi Y 85
Sumikawa K 24
Suzuki H 84
Takabayashi A 36
Takagi H 78
Takahashi M 20
Tani T 82
Tannenbaum SR 41
Taylor I 61
Tenti P 12
Terabe K 14
Thelmo W 74
Thompson JC 100
Thouez JP 75
Tobias RW 57
Toge T 52
Tommasini M 43
Toth B 87
Toussaint J 6
Toussaint J 68
Toussaint J 7
Townsend CM 100
Tsuchiya M 9
Tsukada Y 90
Tsurumaru M 53
Tullis JL 35
Turner MD 96
Turner MD 97
Tytgat GN 46
Usellini L 12
Van Rensburg SJ 81
Vantini I 32
Vecchi M 43
Vezerides M 51
Wada T 45
Waller SL 42
Walton RW 57
Watanabe A 23
Watanabe M 9
Watkins JB 36
Watson LC 100
Weingrad D 60
Weisburger JH 80
Wepsic HT 90
Wertlake SE 25
Wheeler PG 8
White TT 40
Whitehead R 39
Wide L 27
Wilander E 30
Williams R 8
Willis M 65
Wolf JA 59
Woodhouse KW 26
Woodruff KH 57
Woods LK 93
Wright JP 3
Wright JP 31
Wu PC 44
Yachi A 45
Yamada Y 52
Yamamoto H 24
Yamamoto SI 78
Yamaura Y 14
Yanagawa E 52
Yanai H 78
Young G 31
Zamora JL 11

Zannier PM 43 Zhang Z 89 Zubler MA 67

CANCER INFORMATION? CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · **JUST MENTION OUR NAME**

Mention CANCERLINE to your librarian and the world's foremost collection of cancer information is at your disposal. With the help of this computerized data system, you can obtain information on the following:

Cancer Literature

The literature date base, **CANCERLIT**, allows you to survey more than 3,000 biomedical journals for information on your topic of interest. Your search will also alert you to meeting proceedings, monographs, and books published in that area. Informative abstracts averaging 200 words are provided with each citation;

Current Cancer Research

The data base **CANCERPROJ** allows you to retrieve descriptions of current work in any cancer research area. The descriptions, which state research objective, methodology, and experimental results, are supplied for projects underway in 77 countries around the world.

Cancer Therapy Protocols

The **CLINPROT** section of CANCERLINE is designed primarily for clinicians. It provides detailed summaries of currently active experimental protocols for any cancer site, agent, or type.

Ask your biomedical librarian about CANCERLINE.

CANCERLINE is sponsored by the International Cancer Research Data Bank—a program of the National Cancer Institute.

CANCERLINE

NOW

Your Complimentary Copy of

The Latest DIRECTORY OF CANCER RESEARCH INFORMATION RESOURCES

Just Return the Form at the Bottom of this Page

This Directory is Your Guide to the Following Information Sources:

COMPUTERIZED CANCER INFORMATION available through biomedical libraries

PRIMARY JOURNALS containing cancer-related articles

SECONDARY PUBLICATIONS such as abstract bulletins, indexes, bibliographies, etc.

INFORMATION ON PROJECT DESCRIPTIONS AND FUNDING SOURCES

ORGANIZATIONS that provide fellowships, grants, and other support of cancer research, as well as organizations that conduct research

REGISTRIES of cancer patient data

LIBRARIES with special collections of cancer-related literature

CLASSIFICATIONS used to categorize and index cancer information

SPECIAL COLLECTIONS of cancer-related materials

AUDIOVISUAL MATERIALS dealing with cancer

Request for **COMPLIMENTARY DIRECTORY:**
(*Print Clearly* for use as mailing label)

Name: ______________________________

Address: ______________________________

____

City/State/Zip: ______________________________

Country: ______________________________

Mail to:
Directory Request
ICRDB Program
National Cancer Institute
Westwood Building Room 10A18
Bethesda, Maryland 20205

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

U.S. MAIL

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT 19/82/04

NCI/ICRDB/CT19 82/04

PB82-939404

ICRDB CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/04

APRIL, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
MAY 10 1982
U. S. GOVT. PUBS.
DEPOSITORY

AVAILABLE: DIRECTORY OF CANCER RESEARCH INFORMATION RESOURCES, 1981 EDITION. FOR A COMPLIMENTARY COPY, CONTACT ICRDB PROGRAM, WESTWOOD BLDG., RM. 10A18, BETHESDA, MD. 20205

In this issue:

- SCREENING AND DIAGNOSIS.......... 1-5
- PATHOLOGY, STAGING, AND PROGNOSIS.......... 6-11
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS.......... 12-26
- SURGICAL AND RADIATION THERAPY..... 27-33
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY.......... 34
- SELECTED CLINICAL CORRELATIONS...... 35-38
- REHABILITATION ASPECTS.......... 39-41
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER.......... 42-59
- SELECTED PRE-CLINICAL STUDIES.......... 60-67

SCREENING AND DIAGNOSIS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20. 3173/2:

1. STUDIES ON THE DIAGNOSIS OF GASTRIC CANCER AND INTESTINAL METAPLASIA OF THE GASTRIC MUCOSA USING THE METHYLENE BLUE (MB) STAINING METHOD IN VIVO.

Nomura H, Nishi M, Kawaji T, Matsuyama K, Kaneko Y, Odawara R, Matsumura C, Yamamoto S, Hamada N, Takao S, Omotaka S, Makizumi S

First Dept. Surgery, Sch. Medicine, Kagoshima Univ., Usuki-cho, Kogoshima Pref. 890, Japan

Nippon Shokaki Geka Gakkai Zasshi; 14(4):509-515 1981

An enterally administered MB staining method developed by Takemoto and Suzuki wa s used before endoscopic examination of 99 patients to determine the stainability of gastric cancer. It was also used just before surgery on 40 patients, and the possibility of diagnosing gastric cancer and intestinal metaplasia was determined by using fresh specimens. The endoscopic examination showed that cancers were stained in 21 of the 25 patients with gastric cancer, 12 of the 15 patients with early gastric cancer, 2 of the 3 patients with protruded type cancer (both being differentiated adenocarcinoma), 10 of the 12 patients with excavated type cancer, 9 of the 10 patients with advanced cancer, 3 patients with advanced cancer resembling early cancer and 6 patients with Borrmann Type 3 gastric cancer. Eighty-three percent of the differentiated adenocarcinomas and 85% of the poorly differentiated adenocarcinomas were stained. The fresh resected specimens stained were obtained from 13 of the 17 patients with gastric cancer; histologically all 7 of the differentiated adenocarcinoma and 6 of the 10 undifferentiated adenocarcinomas. The appearance of the stain on the intestinal metaplasia was a mixture of coarsely mottled foci, finely stripped foci, ans striped foci. The staining pattern of the intestinal metaplasia of the fresh resected specimens were divided into four types: antral (11 cases), intermediate (2 cases), diffuse (13 cases) and unstained (2 cases). The staining pattern of intestinal metaplasia coincided with the histological pattern in 68%, and a false negative stain was produced in 28.5%. Of 17 cancer lesions, 6 of the 7 differentiated adenocarcinomas were located in the intestinal metaplastic mucosa, and 8 of the 10 undifferentiated adenocarcinomas were located at the borderline between the intestinal metaplastic mucosa and nonmetaplastic mucosa beyond the metaplastic mucosa. (22 Refs) (In JPN)

2. DIGESTIVE ENDOSCOPY IN EMERGENCY DUE TO UPPER GASTROINTESTINAL TRACT HEMORRHAGE.

Reina G, Zelli GP

Istituto III Clinica Chirurgica, Universita degli Studi di Roma, Roma, Italy

Ann Ital Chir; 53(2):181-190 1981

Fiber endoscopy was performed in 104 cases because of upper digestive tract hemorrhage in progress. Before endoscopy a large nasogastric catheter, two way if possible, was introduced, which was useful for diagnostic aspirations and gastric lavage, when necessary. Of 104 patients, 95 had exact diagnosis of location and nature of the lesion: 26 duodenal ulcers, 12 esophageal varices, 14 acute erosive gastritis, 17 malignant gastric tumors, 6 benign gastric tumors, 2 duodenal tumors, and 18 others types of ulcers. Of the 17 patients with gastric malignan tumors, 10 were over 60 yr old and 6 between 30-60 yr. The importance of fiber endoscopy for diagnosis of upper digestive tract hemorrhage, especially in old age was stressed. Rapid correct diagnosis prevented unnecessary surgery and indicated suitable therapy. (28 Refs) (In ITA)

3. INTRAOPERATIVE ULTRASONIC EXAMINATION FOR HEPATECTOMY.

Makuuchi M, Hasegawa H, Yamazaki S
Dept. Surgery, Natl. Cancer Center Hosp., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo 104, Japan
Jpn J Clin Oncol; 11(2):367-389 1981

The use of ultrasound as an aid to hepatectomy during surgical resection in 56 patients is described. Thirty-five patients had hepatocellular carcinoma (HCC), 2 had hepatoblastoma, 7 had metastatic tumors, 4 had hemangioma, and 8 had other hepatic lesions. Of the HCC patients, 23 also had liver cirrhosis. Hepatectomy was performed in 47/56 patients. Partial hepatectomy was performed in 6 cases, systematic subsegmentectomy in 18, monosegmentectomy in 5, bisegmentectomy in 10, and trisegmentectomy in 8. Systematic subsegmentectomy (SS) is a new concept of ultrasonically guided partial hepatectomy, particularly useful in patients with a small HCC in a cirrhotic liver. The ultrasonic apparatus used consisted of a linear arrayed real-time electronic scanning system (Aloka SSD 202) with custom-designed probes. In the 56 patients in whom intraoperative ultrasonic examination was conducted, the procedure detected all solitary lesions in the liver and 14/18 multiple lesions. Intraoperative ultrasonic examination (IUE) failed to detect a main tumor and daughter nodules in one case, and small daughter nodules in three cases. Main lesions which were invisible and nonpalpable from the surface of the liver were present in 16 patients. Of these, 10 had small HCCs, 1 had a large HCC. Of 47 patients who underwent resection, 13 had invisible nonpalpable tumors. Of 30 patients with resected HCC, 10 had invisible nonpalpable tumors. In 23 HCC patients with cirrhotic liver, 9 had invisible nonpalpable tumors, as did 9/15 patients with cirrhotic livers and small HCCs. IUE is an indispensable aid in hepatectomy. (16 Refs)

4. ARTERIOGRAPHY AND PANCREATIC DISEASE.

Ghosn PB, Fontaine A, Roy P, Bourbeau D
(c/o Bourbeau), Hotel-Dieu de Montreal, 3840, rue St-Urbain, Montreal, PQ H2W 1T8, Canada
Can J Surg; 24(6):612-614 1981

In the last 10 yr, 605 celiomesenteric arteriographic examinations were done at Hotel-Dieu de Montreal, including 236 for suspected pancreatic disease. Sixty patients with histologic proof of malignant neoplasm had a positive arteriographic examination while 136 had benign disease of the pancreas and 40 others had extrapancreatic disease. In this series, the sensitivity of arteriography was 88.3% and the specificity 92.6%. In the last 5 yr the sensitivity of superselective arteriography was 100%. These results were better than those obtained with noninvasive techniques such as computerized axial tomography, ultrasonography and duodenography. The authors conclude that arteriography and particularly superselective arteriography is an excellent method for evaluating patients with suspected pancreatic cancer. (Author abstract) (11 Refs)

5. CLINICAL EVALUATION OF BONE METASTASES FROM CARCINOMA OF THE DIGESTIVE SYSTEM BY SCINTIGRAPHY WITH 99MTC-PHOSPHOROUS COMPOUNDS.

Bussaka H, Fujimura N
Dept. Radiology, Kumamoto Univ. Sch. Medicine, Honjo, Kumamoto 860, Japan
Kaku Igaku; 18(5):591-599 1981

Bone scintigraphy with 99mTc-phosphorous compounds was performed on 105 patients with carcinoma of the digestive system. Thirty-two of the patients (30%) had bone metastases. The incidence of these bone metastases was as follows: 14% (4/28) of the patients with carcinoma of the esophagus, 38% (12/32) of those with carcinoma of the stomach, 27% (6/22) with carcinoma of the colon, 67% (6/9) with carcinoma of the liver, 14% (1/7) with carcinoma of the gallbladder and bile duct, and 43% (3/7) with carcinoma of the pancreas. Previous reports stated that liver metastases are found frequently and early, lung metastases seldom and late, and bone metastases rarely. In our study, however, liver and lung metastases were not found in 12 patients with bone metastases from carcinoma of the esophagus, stomach, colon, gallbladder, and pancreas. Two patients with carcinoma of the liver with bone metastases revealed no lung metastases. Therefore, if bone metastases are suspected, bone scintigraphy should be performed on patients with carcinoma of the digestive system with or without liver and lung metastases, especially on patients with carcinoma of the colon because of the significance of the vertebral venous plexus as the metastatic route. Prognosis of carcinoma of the digestive system with bone metastases was poor; the av survival period was 3.5 mo. Symptoms, alkaline phosphatase activity, roentgenographic findings, and histological findings of the primary focus of the digestive tract are discussed. (Author abstract) (23 Refs) (In JPN)

PATHOLOGY, STAGING, AND PROGNOSIS

6. STAGING AND GRADING OF CARCINOMAS OF THE VATER'S PAPILLA.

Dinges HP, Sellner F
Institut fur Pathologie, Landeskrankenhaus Oberwart, A-7400 Oberwart, Austria
Wien Klin Wochenschr; 93(20):638-643 1981

A system for staging and grading of the carcinomas of Vater's papilla is proposed following the recommendations of World Health Organization and findings of Duke. The system provides for three stages of disease: (1) Stage A, limited to the tunica mucosa and tunica muscularis, (2) Stage B, with infiltration of the adventitia of the duodenal diverticulum, and (3) Stage C, with infiltration of the pancreatic parenchyma. Three grades of malignity are described: (1)G1, highly differentiated, (2) G2, moderately differentiated, and (3) G3, undifferentiated and anaplastic. Analysis of 28 cases indicated 8 G1 cases, 11 G2 cases, and 9 G3 cases. Of 18 patients staged, 8 were Stage A, 5 Stage B, and 5 Stage C. Prognosis was good for patients with Stage A and Grade G1 disease. Prognosis was poorer for patients with Stages B and C disease, particularly of Grades G2 and G3. (11 Refs) (In GER)

7. MALIGNANT GASTRO-INTESTINAL TUMOURS. THE FREQUENCY DISTRIBUTION BY AGE, SEX, RACE AND SITE AT GROOTE SCHUUR HOSPITAL, CAPE TOWN, 1974-1978.

Dent DM, Vader CG
Dept. Surgery, Groote Schuur Hosp., Cape Town, South Africa
S Afr Med J; 60(23):883-885 1981

The observed frequency distribution of 2,023 primary malignant gastro-intestinal tumors recorded during the 5-yr period 1974-1978 is reported. The two most common sites were stomach (29.6%) and colon and rectum (29.5%), and the third most common was the esophagus (19.8%). Marked differences in the site of the tumors according to race were found; esophageal carcinoma was the most frequent lesion in Black patients (62.1%), gastric carcinoma in Colored patients (44.1%) and colorectal carcinoma in White patients (46.8%). Within the Black group rarely affected sites were the pancreas (5.1%) and colon and rectum (3.5%). (Author abstract) (6 Refs)

8. STUDIES ON HISTOGENESIS OF THE GASTRIC CARCINOMA USING MINUTE CANCERS.

Taki K, Kuwabara N
Dept. Pathology, Juntendo Univ. Sch. Medicine, 2-1-1 Hongo, Bunkyo-ku, Tokyo, Japan
Pathol Res Pract; 172(1/2):176-190 1981

Histopathologically, we examined 53 lesions, in 13 cases, of minute cancers measuring less than 5 mm in the largest diameter, in order to study the histogenesis of gastric cancer. Forty-four lesions in four cases were undifferentiated adenocarcinoma, and nine lesions in nine cases were differentiated adenocarcinoma. Cancer cells of the undifferentiated type were confined to the lamina propria of the mucosa, especially near the generative cell zone of the neck of the gastric pit, and had a tendency to extend to the surface as the size of the minute cancer increased. The surrounding mucosa was ordinary epithelia of the stomach without intestinal metaplasia. Atrophy of the pseudopyloric and fundic glands was seen at the lesions with inflammatory-cell infiltration. Cancer cells of the differentiated type had a tendency to involve the entire thickness of the mucosa by replacing the epithelia of the gastric pits. The surrounding mucosa was composed of markedly intestinalized epithelia. And the border between the cancer cell and the intestinalized epithelial cell was sharp. Atrophy of the pseudopyloric and pyloric glands was seen at the lesions with inflammatory-cell infiltration. We conclude that both types of carcinomas occur from the generative cell zone of the gastric pit. Cancer cells of the undifferentiated type may originate in the ordinary mucosa of the stomach, penetrate the basement membrane of the epithelia of the gastric pit and appear in the lamina propria. On the other hand, cancer cells of the differentiated type seem to originate in the intestinalized epithelium and extend to replace the epithelia of the gastric pits. (Author abstract) (29 Refs)

9. MORPHOLOGICAL CHARACTERISTICS OF STOMACH CANCER.

Nesvetov AM, Zhdanov AS
Dept. Pathology, Central Inst. Advanced Training for Physicians, Moscow, USSR
Sov Med; (8):38-43 1981

Results of morphological examination of 300 surgical specimens of cancer of the stomach are reported. Five anatomical variants were identified; polypoid (12%), flat (20%), and ulcerative (24%) variants corresponded to early carcinoma, while saucer-like (31%) and diffuse (13%) variants were detected only in patients who were in terminal stages. The patients with polypoid cancer were found to have a history of stomach polyps and chronic gastritis, while ulcerative, flat, saucer-like, and diffuse tumors originated from gastric ulcer. Saucer-like and diffuse tumors were characterized by marked invasiveness and metastatic spread. (9 Refs) (In RUS)

READEX FICHE best copy available

10. GASTRIC CARCINOMA. PROPOSAL OF THE CLINIC OF INTERNAL MEDICINE OF BONN UNIVERSITY HOSPITAL.

Illiger HJ, Lechmann-van Rienen R, Gugler R

Onkologischer und gastroenterologischer Arbeitsbereich, Med. Univ.-Klinik Bonn, Sigmund-Freud-Strasse 25, D-5300 Bonn 1, W. Germany

MMW; 123(44):1650-1652 1981

The postoperative course, prognosis, and follow-up of patients with gastric cancer are discussed. The prognosis is best for patients under 65 yr, for patients with hyperacidity, normal serum protein level, small tumor invading at most the submucosa, for patients without lymph node metastases, for patients with polypus or flat exulcerated tumors, for patients with well-differentiated tumors, pure adenocarcinoma or medullary carcinoma, and for patients with tumors of the greater curvature and fundus. No metastases are found in 25-28% of all patients, regional lymph node metastases are present in 30-68%, local infiltration in approx 50%, diffuse ip spread in 28-60%, and hematogenous metastases in 40-60%. The basic follow-up program should include physical check-up; laboratory tests, including the determinations of total protein and iron; and monitoring of body wt. the basic program should be performed at 3-mo intervals during the 3 yr after potentially radical surgery, and then at 6-mo intervals until the end of yr 5. The special follow-up program should include endoscopy at 6-mo intervals at least during the first 2 yr, and then annually until the end of yr 5. The x-ray contrast examination of the gastrointestinal transit should be performed only in patients refusing endoscopy. (6 Refs) (In GER)

11. EARLY GASTRIC CANCER AT THE HOTEL-DIEU DE MONTREAL: A 30-YEAR REVIEW.

Rheault MJ, Leandri R, Lapointe A, Potvin C

Dept. Surgery, Hotel-Dieu de Montreal, 3840, rue St-Urbain, Montreal, PQ H2W 1T8, Canada

Can J Surg; 24(6):606-607 1981

Early gastric cancer is usually defined as a lesion involving the mucosa alone or the mucosa and submucosa, regardless of whether lymph-node metastases are present. Between 1948 and 1978, 1,295 gastric cancers were diagnosed at the Hotel-Dieu de Montreal. Of these, 64 (5%) were early gastric cancers. Sixty of the 64 patients underwent gastric resection for cure. The other four cancers were found incidentally at autopsy. One patient (1.7%) died following operation. Ten patients were followed up for less than 5 yr and therefore were excluded from survival analysis, as were 6 patients who died of unrelated causes. Forty-one of 43 patients survived, free of disease, for more than 5 yr following operation, a survival rate of 95.3%. The annual yield of early gastric cancers has remained relatively constant since 1948, even with a decreasing number of gastric cancers treated at the hospital. The advent of fiberoptic endoscopy significantly (p less than 0.005) increased the number of early gastric cancers detected. Further improvements will depend on a more vigorous approach to endoscopy, especially in high-risk patients. A refined radiologic technique, including double-contrast roentgenography after a barium meal, was diagnostic in all patients who underwent operation in this study. (Author abstract) (7 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

12. RELATIONSHIP BETWEEN SERUM ALPHA-FOETOPROTEIN, CIRRHOSIS AND SURVIVAL IN HEPATOCELLULAR CARCINOMA.

Johnson PJ, Melia WM, Palmer MK, Portmann B, Williams R

Liver Unit, King' Coll. Hosp. Medical Sch., Denmark Hill, London SE5, England

Br J Cancer; 44(4):502-505 1981

An analysis of survival time of 57 West European patients with hepatocellular carcinoma was carried out to define which of several possible factors (age, sex, cirrhosis and raised serum alpha-fetoprotein (AFP)) influenced survival. Although survival was significantly longer in younger patients (p less than 0.02) and in patients with normal serum AFP (p less than 0.01), multivariate analysis showed that significant variation in survival time is better explained by the single factor, the presence of cirrhosis, than by AFP level. This does not seem to apply for patients with this tumor in Africa and the Far East, and there may be a fundamental difference in the natural history of the tumor between high- and low-incidence areas. (Author abstract) (14 Refs)

13. DIAGNOSTIC APPLICATIONS OF ALPHA-FETOPROTEIN: GOVERNMENT REGULATIONS PREVENT FULL APPLICATION OF A CLINICALLY USEFUL TEST.

Sell S

Dept. Pathology, Sch. Medicine, Univ. California at San Diego, La Jolla, CA, 92093

Hum Pathol; 12(11):959-963 1981

An elevated serum concentration of alpha-fetoprotein (AFP) in a nonpregnant adult is the single most discriminating laboratory test indicative of malignant disease. Elevations of the serum AFP level above 400 nanog/ml are essentially diagnostic of hepatocellular cancer. Elevations of the serum AFP level in experimental animals exposed to chemical hepatocarcinogens may be obvious many mo before the appearance of hepatocellular carcinoma. Elevations of serum AFP following acute liver injury reflect the degree of liver cell regeneration. Germ cell tumors are associated with elevations of the serum AFP. Low levels of serum AFP may be associated with tumors of the gastrointestinal tract or lungs. Measurement of AF in maternal serum is an established procedure in parts of Europe as a means of screening for open neural tube defects. This application in the United States has been delayed by a peculiar set of circumstances involving government regulations and strong political lobbying groups. (5 Refs)

14. ALPHA-FETOPROTEIN ON HUMAN PERIPHERAL BLOOD LYMPHOCYTES DOES NOT BLOCK COMPLEMENT-DEPENDENT LYMPHOCYTOTOXICITY.

Ren EC, Chan SH

WHO Immunology Res. and Training Centre, Univ. Singapore, Singapore 0316, Singapore

Scand J Immunol; 14(3):309-313 1981

Using a direct immunofluorescence assay, we showed that alpha-fetoprotein (AFP) both in purified form and in hepatocellular carcinoma (HCC) sera was capable of binding onto 10-20% of T lymphocytes and 5-10% of B lymphocytes in human peripheral blood when these lymphocytes were preincubated in

AFP-positive fluids at 4 C in the presence of sodium azide. But when the preincubation temperature was raised to 37 C, most of the membrane-bound AFP was internalized or shed, and, consequently, less than 3% of the cells showed positive membrane fluorescence. In addition, binding of AFP onto lymphocyte surface membrane and the continuous presence of large amounts of AFP in these lymphocyte cultures did not interfere with the action of cytotoxic antibodies directed against HLA determinants on the lymphocyte surface. (Author abstract) (15 Refs)

15. PRE- AND POSTOPERATIVE CHANGES OF ALPHA-FETOPROTEIN AND HUMAN CHORIONIC GONADOTROPIN IN HEPATOMA OF CHILDREN.

Ikeda K, Kimura N, Suita S, Hayashida Y, Nakagawara A, Kawaoi A
Dept. Pediatric Surgery, Faculty Medicine, Kyushu Univ., 1-1, 3-chome Maedashi, Higashiku, Fukuoka 812, Japan
Z Kinderchir; 34(1):42-55 1981

Serial determinations of alpha-fetoprotein (AFP) and immunoperoxidase staining for AFP and human chorionic gonadotropin (HCG) producing cells were performed in 15 children (9 boys, 6 girls; age 4 mo to 11 yr, 5 mo) with malignant liver tumor (14 hepatoma, 1 undifferentiated sarcoma). Serial serum AFP determinations in nine patients revealed normal preoperative levels in two and levels of 150,000-2,500,000 nanog/ml in seven. Postoperative AFP changes were of three types: (1) transient decrease followed by gradual increase, as seen in patients treated by interruption of hepatic blood supply combined with chemotherapy, (2) rapid decrease in AFP level to near-normal followed soon after by increase, seen in patients with recurrence after resection, and (3) marked and consistent fall of AFP, found in patients with complete recovery after resection. In one patient with AFP and HCG producing hepatoblastoma, recurrence was associated with increase only in AFP. Immunoperoxidase staining of the resected specimen showed both AFP and HCG producing cells in a well-differentiated nest composed of distinctive cells constituting only part of the tumor. (10 Refs)

16. LOCALIZATION AND MORPHOLOGICAL OBSERVATION OF ENZYME-LABELLED IMMUNOFETOPROTEIN IN HUMAN LIVER CANCER AND PERICANCEROUS LIVER TISSUE.

He D, Dai Y, Tao W, Wang H, Wu g, Ping B, Zheng B
Dept. Pathologic Anatomy, Second Military Medical Coll., People's Republic of China
Zhonghua Yixue Jianyan Zazhi; 4(1):12-16 1981

In recent yr, the distribution of alpha-fetoprotein (AFP) in liver cancer and its relationship to hepatocarcinogenesis has been reported. However, the distribution of AFP in pericancerous liver tissue in primary hepatoma patients has not been reported. Results of AFP distribution studies are described for 22 cases of primary hepatoma (17 males, 5 females), using an indirect enzyme-labeled antibody technic. Surgical liver specimens were used. It was found that AFP was distributed mainly in the cytoplasm of cancer and pericancerous cells. The distribution was mostly diffused, with only a small portion localized in a particular part of the cytoplasm, beneath the cell membrane or around the nucleus. Tissue distribution of AFP was random, with most AFP-positive cells located at the edge of the cancer mass, in the lobule and around intrahepatic veins. In most cases, AFP-positive rate was higher in pericancerous cells than in liver cancer cells and was related to the activity of chronic liver diseases. (15 Refs) (In CHI)

17. GAMMA-GLUTAMYLTRANSPEPTIDASE: A TUMOR CELL MARKER WITH A PHARMACOLOGIC FUNCTION.

Vanderlaan M, Phares W
Biomedical Sciences Div., Lawrence Livermore Natl. Lab., P.O. Box 5507, Livermore, CA, 94550
Histochem J; 13(5):865-877 1981

The histochemical distribution of gamma-glutamyltranspeptidase (GGTP) in rat and human tissues is reviewed, and the changes observed during embryogenesis and carcinogenesis are discussed. The pattern of GGTP distribution is similar in both species, with activity in adults found primarily in the proximal tubules of the kidney, the secretory follicle cells of the pancreas, and the villous cells of th jejunum. There is only minimal activity in intestinal crypt cells, but considerable in mature villus cells. Mammary gland, bile duct cells in adult liver, endothelial cells of brain capillaries, follicle sheath cells in actively growing hairs, and lymphocytes also have associated GGTP activity. Higher activity is seen in both embryonal and cancerous tissues. Soon after initial exposure to carcinogens, islands of presumably preneoplastic cells form in the liver, and are characterized by very high GGTP activity. The majority of hyperplastic nodules and carcinomas that eventually develop also have increased GGTP activity. This induction of increased activity persists long after carcinogen exposure. The possible metabolic significance of GGTP is discussed. (63 Refs)

18. THE VALUE OF SERUM 5'-NUCLEOTIDE PHOSPHODIESTERASE ISOZYMES IN THE DIAGNOSIS OF PRIMARY LIVER CANCER.

Lu H, Chen Q, Jiang K, Ming D, Shi B, Ding C, Pan L, Yu J, Liu Z
Shanghai Second Medical Coll., Affiliated Xinhua Hosp., Shanghai, People's Republic of China
Zhonghua Yixue Zazhi; 60(4):219-221 1981

The use of alpha fetoprotein (AFP) determination has greatly increased the diagnostic level of primary liver cancer in recent yr. However, there is a small proportion of liver cancers that are negative for AFP. The value of serum 5'-nucleotide phosphodiesterase isoenzymes (NPI) in the diagnosis of liver cancers is described with special reference to those negative for AFP. Of 95 cases of primary liver cancer tested between 1979 and 1980, 79 cases (83.2%) were positive for NPI. Among 70 AFP-positive cases, 60 cases (85.7%) were NPI-positive and among 25 AFP-negative cases, 19 cases (76.0%) were NPI-positive. Among 15 resected cases of primary liver cancer only 2 cases (13.3%) were NPI-positive. Liver cirrhosis and HBSAG-positive hepatitis had a positive rate of 10.3% (4/39) while none of the 76 normal subjects tested was positive for NPI. It was concluded that NPI determination when combined with AFP determination is useful in the diagnosis of primary liver cancer as well as in its differential diagnosis from non-cancerous liver diseases. (7 Refs) (In CHI)

19. THE C-PEPTIDE SUPPRESSION TEST IN NORMAL PERSONS AND INSULINOMA PATIENTS: AN ATTEMPT TO EVALUATE ITS USE IN FUNCTIONAL DIAGNOSIS.

Mandelkow H, Goetz K, Kuhnau J
(c/o Kuhnau) Med. Kernklinik und Poliklinik, Univ.-Krankenhaus Eppendorf, Martinistr. 52-07-, D-2000 Hamburg 20, W. Germany
Klin Wochenschr; 59(21):1209-1215 1981

C-Peptide and insulin are secreted in equimolar amounts by the pancreatic beta cells. In certain situations where insulin itself cannot be measured, the determination of the C-peptide concentration in the serum may replace the observation of insulin concentration. Under this aspect the determination of C-peptide is performed in the C-peptide suppression test. It serves to demonstrate whether the endogenous insulin secretion is suppressible by an insulin injection or not. In this way, functional hyperinsulinism can be differentiated from autonomous tumor hyperinsulinism, the latter not being suppressible by insulin induced hypoglycemia. In regard to the reviewed literature we agree with other authors that the C-peptide suppression test yields a pathological result in 85% of insulin-producing tumors. (23 Refs) (In GER)

20. HYPOGLYCEMIA ASSOCIATED WITH NON-ISLET-CELL TUMOR AND INSULIN-LIKE GROWTH FACTORS. A STUDY OF THE TUMOR TYPES.

Gorden P, Hendricks CM, Kahn CR, Megyesi K, Roth J
NIH, Building 10, Room 9N222, Bethesda, MD, 20205
N Engl J Med; 305(24):1452-1455 1981

Plasma samples from 52 patients with non-islet-cell tumors associated with fasting hypoglycemia were examined. Insulin-like growth factor (ILGF) was found in 19 samples (37%) at levels greater than 150% of the normal control levels. When individual tumor types were considered, 6/7 patients with hemangiopericytoma had elevated values. Elevations of ILGF were also observed in patients with other mesenchymal tumors, hepatoma, adrenocortical carcinoma, and pheochromocytoma. Patients with lymphomas had distinctly low values of ILGF. The nature of ILGF is unknown, but it circulates bound to a high-mol wt-protein. In one patient with a hemangiopericytoma involving the liver, irradiation of the liver mass resulted in a fall in ILGF levels and a marked improvement in fasting hypoglycemia. The causes of hypoglycemia in the non-islet-cell hypoglycemia syndrome appear heterogeneous; involvement of ILGF in the syndrome seems to predominate in patients with certain tumor types. (10 Refs)

21. TESTOSTERONE AND HIGH DENSITY LIPOPROTEINS IN PATIENTS WITH DISSEMINATED GASTRIC CANCER.

Higuchi T, Nakamura T, Uchino H
Dept. Internal Medicine, Shiga Center for Adult Diseases, 328 Moriyama, Moriyama, Shiga 524, Japan
Jpn J Clin Oncol; 11(2):329-333 1981

The plasma testosterone and serum high density lipoprotein profiles of 13 male patients with newly diagnosed, histologically proven disseminated gastric cancer, and seven male patients with histologically proven hepatic cirrhosis were compared to those of healthy controls. Mean albumin level in patients with hepatic cirrhosis and gastric cancer was significantly lower than that in control subjects. Mean total bilirubin in both cirrhotic and gastric carcinoma patients was significantly higher than in controls, as were levels of alkaline phosphatase. Mean high density lipoprotein-cholesterol (HDL-C) levels in cirrhotic and gastric carcinoma patients were significantly lower than those in controls. Mean plasma testosterone levels in patients were also lower than those in controls, but the differences were not significant. A significant positive correlation was observed between HDL-C levels and testosterone levels in gastric carcinoma patients. Gastric carcinoma patients with lower testosterone levels (5.0 nanomol/ml) had significantly lower HDL-C and serum albumin levels than similar patients with higher testosterone levels. Significant correlation was observed between serum levels of HDL-C and survival time, and between plasma levels of testosterone and survival time. (15 Refs)

22. VITAMIN B12 MALABSORPTION AFTER GASTRECTOMY FOR CANCER.

Quaranta L, Tavera A, Camuzzini GF, Quercio M, Cartia Q
I Divisione di Chirurgia Generale, Ospedale Civile 'S. Croce', Cuneo, Italy
Minerva Med; 72(44):2945-2949 1981

The absorption of vitamin B12 was studied in 17 patients (10 men and 7 women) 0.5-7 yr after total (10 cases) or subtotal (7 cases) gastrectomy for malignant epithelial neoplasm of the stomach. After total gastrectomy, the urinary 58Co-B12 level was pathologically low, corresponding to 1.995% of the dose administered versus normal values of 11-28%. The 57Co-B12-intrinsic factor (57Co-B12-IF) activity was nearly normal, and the 58Co-B12/57Co-B12-IF ratio was 9.42 vs normal values of 0.5-1.4. The 58Co-B12 level in the urine of the patients subjected to subtotal gastrectomy was 6.907% of the administered dose, but the 57Co-B12-IF activity was normal in only 6/7 cases. The 58Co-B12/57Co-B12-IF ratio was 2.517. (33 Refs) (In ITA)

23. ASSESSMENT OF EXOCRINE PANCREATIC FUNCTION BY ORAL ADMINISTRATION OF N-BENZOYL-L-TYROSYL-P-AMINOBENZOIC ACID (BENTIROMIDE): 5 YEARS' CLINICAL EXPERIENCE.

Lang C, Gyr K, Stalder GA, Gillessen D
(c/o Gyr) Div. Gastroenterology, Kantonsspital, CH-4031 Basle, Switzerland
Br J Surg; 68(11):771-775 1981

Exocrine pancreatic function was assessed in 588 subjects by oral administration of 1 g of the chymotrypsin-labile peptide N-benzoyl-L-tyrosyl-p-aminobenzoic acid (Bentiromide) from 1974 to 1979. The pancreatic function test (PFT) was performed in 126 controls, 217 patients with pancreatic diseases, 196 patients with various non-pancreatic gastrointestinal disease, 18 patients with renal disease and 31 patients with various other diagnoses. In 62 of 72 patients (86%) with chronic pancreatitis and in 19 of 25 patients (76%) with pancreatic carcinoma, the excretion of p-aminobenzoic acid (PABA) in the urine was significantly less than in the controls. In contrast, 328 of 353 controls and patients with non-pancreatic diseases (93%) had PABA excretion within normal limits. The sensitivity and specificity of the Bentiromide-test observed in this study is sufficient to detect moderate to severe disturbances of pancreatic exocrine function. The PFT has proved to be an easy and reliable screening test for pancreatic exocrine function in ambulatory as well as in hospitalized patients. (Author abstract) (24 Refs)

24. INTESTINAL M3 ANTIGEN, A MARKER FOR THE INTESTINAL-TYPE DIFFERENTIATION OF GASTRIC CARCINOMAS.

Bara J, Hamelin L, Martin E, Burtin P
Labatoire d'Immunochimie, Institut de Recherches Scientifiques sur le Cancer, B.P 8, 94802 Villejuif Cedex, France
Int J Cancer; 28(6):711-719 1981

The mucus-associated intestinal M3 antigen, normally restricted to intestinal goblet cells, was found in 35 out of 100 gastric adenocarcinomas belonging to intestinal (19/64) as well as diffuse (16/36) types according to Lauren's classification, often accompanying the other mucus-associated gastric M1 and M2 antigens. This M3 antigen was predominant over the gastric M antigens in 25 of these 35 tumors; 18 of these belonged to the histological intestinal type. According to the WHO classification, the M3 antigen was found to predominante in all mucinous adenocarcinomas (7/7), was never present in the undifferentiated carcinomas (0/8), but was also found in some tubulo-papillar (16/57) and signet-ring cell (12/27) adenocarcinomas. This antigen could be used as a new criterion and incorporated into a point system containing morphological and tumor cell behavioral considerations; then it would appear to be a good marker for intestinal-type differentiation. Indeed, 22 of these 25 gastric adenocarcinomas which produced predominantly M3 antigen showed such an intestinal-like differentiation. The M antigenic pattern of gastric carcinoma suggested a duodenal rather than colonic-type differentiation. (Author abstract) (36 Refs)

25. CORRELATION BETWEEN LEUKOCYTE ADHERENCE INHIBITION (LAI) INDEX AND STAGE IN PATIENTS WITH PANCREATIC CARCINOMA AND HEPATOCELLULAR CARCINOMA.

Kondo H
Third Dept. Internal Medicine, Kyorin Univ. Sch. Medicine, Mitaka-shi, Tokyo 181, Japan
Kyorin Igakkai Zasshi; 12(2):103-112 1981

The correlation between the LAI index and the degree of macroscopic extension (Stage) which was determined by surgical findings and autopsy findings, was studied in patients with pancreatic carcinoma or hepatocellular carcinoma. In the 20 patients with pancreatic carcinoma, as all of the cancers were at Stage IV, no correlation between the LAI index and Stage could be found. Also, no obvious correlation was found between the LAI index and lymph node metastasis, invasion of the pancreatic capsule, metastasis to the liver, or peritoneal dissemination, in carcinoma of the pancreatic head. In the patients with carcinoma of the pancreatic body and tail, however, the LAI index showed a tendency to increase in parallel with the degree of peritoneal dissemination. On the other hand, in 13 patients with hepatocellular carcinoma, 3 had Stage I cancer and 10 had Stage III. However, there was no difference in LAI indices between the two Stages. Also, no significant difference was found between the LAI index and the the number of days from the LAI testing to death. (Author abstract) (7 Refs) (In JPN)

26. ABNORMALITIES OF IMMUNOLOGIC RESPONSE OF LYMPHOCYTES IN PATIENTS WITH CANCER OF THE DIGESTIVE ORGANS.

Otsuka S, Mugitani H, Shinbo T, Yata J
First Dept. Internal Medicine, Toho Univ. Sch. Medicine, 6-11-1, Omori-Nishi, Ota-ku, Tokyo 143, Japan
Jpn J Clin Oncol; 11(2):291-298 1981

One hundred and seventy-four patients with digestive tract cancer (28 with esophageal carcinoma, 121 with gastric cancer, 3 with bile duct cancer of carcinoma of the pancreas, and 22 with colorectal carcinoma) not previously treated with chemotherapy were evaluated for lymphocyte function. Percentages of T and B lymphocytes in these patients both before and after surgery did not differ significantly from those of healthy controls. No relationship was found between the percentage of T and B cells and stage of cancer, although the percentage of T cells was lower in 21/1 patients before surgery compared to healthy controls. The percentage of TG cell (IgG) exceeded the normal value of 8% preoperatively in 86 patients, and fell to below 8% in 46 after surgery (from 12.18 before surgery to 7.98 after surgery). An increased percentage of TG cells and a decreased phytohemagglutinin response were observed in 33/90 patients examined with an inverse correlation between these parameters observed for patients with Stage III cancer. An increased percentage of TG cells and a decreased helper activity of T cells were observed in 18.7% of the patients with early stage vs 39% with advanced stage cancer. The significance of changes in these immunologic parameters is discussed. (14 Refs)

SURGICAL AND RADIATION THERAPY

27. COMPARISON OF THE RESULTS OF ESOPHAGECTOMY WITH AND WITHOUT A THORACOTOMY.

Steiger Z, Wilson RF
Dept. Surgery, Veterans Admin. Hosp., Allen Park, MI
Surg Gynecol Obstet; 153(5):653-656 1981

Two techniques of esophagectomy for carcinoma of the esophagus were compared in 41 patients. Of these, 39 had chemotherapy or radiotherapy, or both, preoperatively. Overall, the 20 patients who had a blind esophagectomy through an abdominal and a cervical incision without a thoracotomy tolerated the procedure quite well. However, two patients died 3 and 5 wk afterward of arrhythmia and respiratory insufficiency, respectively. None of the 21 patients having an esophagectomy by means of a standard thoracotomy died. The blind esophagectomy took an hr less to perform and require slightly more blood than the standard thoracic esophagectomy. Except for the one patient who died of respiratory insufficiency, it appeared that the patients not having a thoracotomy had less pulmonary complications and required less ventilator assistance. The length of stay was almost identical. The main advantages found were the ease of the operation, no change needed in the position of the patient and the shorter duration of the operation. Theoretic advantages, not yet confirmed, include decreased mortality and morbidity if an anastomotic leak occurs and decreased change of local recurrence of the carcinoma. (Author abstract) (8 Refs)

28. LONG TERM RESULTS IN PATIENTS WHO SURVIVED FIVE OR MORE YEARS AFTER GASTRIC RESE CTION FOR PRIMARY CARCINOMA.

Hoerr SO
Dept. General Surgery, Cleveland Clinic Foundation, Cleveland, OH
Surg Gynecol Obstet; 153(6):820-822 1981

A personal series of 82 patients with primary carcinoma of the stomach operated upon between 1 January 1950 and 31 December 1973 survived 5 yr, or longer, after the initial resection. Fifty-five patients were observed until the time they died, and 27 patients who are still alive have been observed from 8 to 29 yr. Many of the patients have lived into their 80's and 90's, with postoperative survival times of more than 20 yr. Some of the long survival times followed both extensive operative procedures upon unfavorable lesions and operations upon patients who were in their 70's at the time of operation. A surprise finding as the cause of death was a recurrence of carcinoma in 13 patients, manifesting itself as long as 12 yr after the initial operation. In six of the patients, the recurrence was confirmed at a second operation performed by me. The long term results in these patients seem to indicate that, at least one-third of the patients may look forward to a normal life expectancy based upon their age at operation. The surgeon, therefore, should approach potentially curable carcinoma of the stomach with vigor and some optimism, even though the lesion is extensive or the patients are elderly, since a long healthy period of survival may be the reward. (Author abstract) (1 Ref)

29. PREOPERATIVE RADIOTHERAPY FOR CARCINOMA OF THE ESOPHAGUS.

Launois B, Delarve D, Campion JP, Kerbaol M
Clinique Chirurgicale, Centre Hospitalo-Universitaire, Rennes, France
Surg Gynecol Obstet; 153(5):690-692 1981

From 21 March 1973 to 22 June 1976, 124 patients with squamous cell carcinoma of the esophagus were randomized for inclusion in a prospective trial of preoperative irradiation. Fifteen patients were excluded because of inoperability. Sixty-seven patients were randomly selected to receive 4,000 rads of cobalt radiation for 8 days prior to operation; 57 patients were operated upon without receiving radiation therapy. No significant differences were noted between the two groups with regard to age, sex, tumor site, experience of the surgeon, method of approach or surgical technique. Eighty esophageal resections were performed upon 47 of the 62 irradiated patients, and 33 of the 47 nonirradiated patients. Of the 62 irradiated patients, 14 died during operation, compared with 11 of the 47 nonirradiated patients, the difference between the two groups not being statistically significant. Irradiation was associated with a higher mortality for lesions in the mid third part of the esophagus, 11 of 29 versus 4 of 19, but again, the difference was not significant. In the irradiated patients, the 5 yr actuarial postoperative survival rate was 9.5 versus 11.5% for the nonirradiated patients. In conclusion, preoperative radiation therapy does not produce a statistically significant short term or long term benefit in the management of squamous cell carcinoma of the esophagus. (Author abstract) (2 Refs)

30. FAST NEUTRON IRRADIATION FOR LOCALLY ADVANCED PANCREATIC CANCER.

Smith FP, Schein PS, Wooley PV, Rogers C, Macdonald JS, Ornitz R
Dept. Medicine, Div. Medical Oncology, Georgetown Univ. Medical Center, Vincent T. Lombardi Cancer Res. Center, Washington, DC, 20007
Int J Radiat Oncol Biol Phys; 7(11):1527-1531 1981

The feasibility of delivering a therapeutic dose of neutrons to abdominal tumors was investigated in 20 patients with histologically documented, locally advanced, unresectable pancreatic cancer (19 adenocarcinomas, 1 islet cell cancer). The patients received 1,700-1,750 neutron rad (approx equivalent to 5,200 photon rad), either alone or with iv 5-fluorouracil (5-FU: 500 or 375 mg/square meter on the first and last 3 days of radiation therapy). Five of the 14 patients with adenocarcinoma with measurable tumor masses evidenced a partial response; four responders had received 5-FU with neutron irradiation. The patient with islet cell carcinoma had no residual tumor at surgical exploration 6 mo after neutron therapy. In nine patients, the initial site of relapse was within the irradiated region. Distant sites of relapse included the liver, lung, and extra-abdominal lymph nodes. Ten patients receiving neutrons alone or in combination with lower dose 5-FU demonstrated a moderate myelosuppression; 10 who received the higher dose of 5-FU experienced marked myelosuppression. Hematologic toxicity was prolonged, persisting for periods in excess of 1 mo in most cases and for as long as 3 mo in some. Neutron irradiation greatly reduced the hematologic tolerance of the patients to subsequent treatment with combination chemotherapy. Three of these patients required hospitalization, two with leukopenia and fever, and one with thrombocytopenia and bleeding. Other toxicities included skin erythema, nausea/vomiting, diarrhea, hemorrhagic gastritis, hepatopathy, esophagitis, colitis, and myelopathy. The median survival for all patients was 6 mo, much less than that reported with 5-FU and photon irradiation. Enthusiasm for this therapy should be reserved until clear evidence of a therapeutic advantage over photon therapy is demonstrated in controlled clinical trials. (19 Refs)

31. ERADICATION AND PALLIATION OF SQUAMOUS CELL CARCINOMA OF THE ESOPHAGUS WITH CHEMOTHERAPY, RADIOTHERAPY, AND SURGICAL THERAPY.

Steiger Z, Franklin R, Wilson RF, Leichman L, Seydel H, Loh JJ, Vaishamapayan G, Knechtges T, Asfaw I, Dindogru A, Rosenberg JC, Buroker T, Torres A, Hoschner D, Miller P, Pietruk T, Vaitkevicius V
Veterans Admin. Hosp., Allen Park, MI, 48101
J Thorac Cardiovasc Surg; 82(5):713-719 1981

Between April, 1977, and March, 1981, 86 unselected patients with proved squamous cell carcinoma of the esophagus were treated with a combination of chemotherapy and radiotherapy followed by operation whenever feasible. The preoperative chemotherapeutic agents used initially were 5-fluorouracil, and mitomycin C. After December, 1979, cis-platinum was used instead of mitomycin C. Radiotherapy (3,000 rads) of the tumor was begun at the same time as the chemotherapy. An esophagectomy was performed on suitable candidates 3 to 4 wk after the chemotherapy and radiotherapy were completed. the mucosal lesion disappeared in 69 of the 86 patients, and dysphagia was relieved at least temporarily in 57 of 62 patients. Recurrent dysphagia resulting from fibrosis at the tumor site caused a secondary stenosis in 11 patients. Excellent palliation was obtained in five patients with bronchoesophageal fistulas who had an initial substernal gastric bypass followed by chemotherapy and radiotherapy. Of the 48 patients who had an esophagectomy, 15 (31%) had no tumor in the resected specimen. Eleven of these 15 patients are still alive with no evidence of disease. All patients with a lesion less than 5.0 cm in length had complete regression of the tumor. We believe that this combination of chemotherapy, radiotherapy, and surgical therapy provides excellent palliation, increases resectability, and has a potential for cure. (Author abstract) (14 Refs)

32. RECENT RESULTS OF CLINICAL THERAPEUTIC TRIALS FOR GASTROINTESTINAL MALIGNANCIES CONDUCTED IN THE UNITED STATES.

Kisner DL, Schein PS, Macdonald JS
Div. Cancer Treatment, Cancer Therapy Evaluation Program, NCI, Bethesda, MD
Recent Results Cancer Res; 79:28-40 1981

Current clinical therapeutic trials of treatment for gastrointestinal cancer are reviewed. The trials have been aimed at identifying active single chemotherapeutic agents (CA), combining modalities in treatment of locoregional disease, and introducing active therapies into surgical adjuvant use. Drugs active against advanced gastric cancer include 5-fluorouracil (5-FU), mitomycin C (MM-C), 1,3-bis(2-chloroethyl)-1-nitrosourea, adriamycin (ADM), and cis-platinum. Combinations of CA appear more effective than single agent therapy. Against locally advanced gastric tumors, CA alone produce longer survival times than CA plus radiation therapy, but combined therapy has a long-term benefit. Agents active against pancreatic carcinoma include 5-FU, MM-C, streptozotocin, and ADM. Radiation therapy with 5-FU appears more effective than radiation alone. Toxic effects have been produced by 5-FU. Research into treatment of colorectal carcinoma (CRC) should be directed at identifying new active agents, since those already studied have produced limited benefits. The value of chemotherapy as an adjuvant to surgery in CRC is uncertain. Some favorable results have been obtained with nonsurgical therapies. (41 Refs)

33. CLINICAL APPLICATIONS OF LASER ENDOSCOPY.

Namiki M
Third Dept. Internal Medicine, Asahigawa Medical Coll., Asahigawa, Japan
Nippon Rinsho; 39(5):205-211 1981

Clinical applications of laser endoscopy includes laser hemostasis for gastrointestinal hemorrhage, treatment of gastric polyps, treatment of elevated-type early stage gastric cancer, treatment of refractory gastric ulcers, treatment of constrictive diseases due to cancer, and diagnosis of Borrmann Type IV gastric cancer. Lasers have been used for temporary hemostasis prior to surgery for some malignant tumors. Early discovery and treatment of early stage elevated gastric cancer is important, but in the elderly, patients with serious complicating symptoms, and patients who are surgical risks, laser radiation can be an effective non-surgical therapy. Laser therapy for patients with elevated gastric lesions consists of radiation administered at a range of 3-5 cm from the laser to the elevated area at 60-70 watt power for 2-3 second intervals (4-10 exposures/treatment, 2-3 treatments). Biopsies of the area should be performed after radiation to determine whether or not the tumor has recurred. This method has been used successfully in 15 patients who are still in remission after a max of 2 yr 8 mo. One 65-yr-old patient with laryngeal cancer that obstructed the esophagus was treated with laser endoscopy successfully. Cases of Borrmann Type IV gastric cancer are difficult to diagnose due to their submucosal spread. Small holes can be made with lasers in the gastric mucosa, enabling biopsy of deeper layers; many diagnoses of Borrmann Type IV cancer have been possible in this way. (30 Refs) (In JPN)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

34. TEN YEARS' EXPERIENCE WITH INTRA-AORTIC INFUSION CHEMOTHERAPY FOR GASTROINTESTINAL MALIGNANT TUMORS.

Yoshikawa K
Dept. Surgery, Natl. Cancer Center Hosp., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo 104, Japan
Jpn J Clin Oncol; 11(2):391-397 1981

Results, indications for, complication with, and future problems of intra-aortic infusion chemotherapy in 114 patients with intra-abdominally disseminated cancer of gastrointestinal origin are described. At the beginning of the study, 200-500 mg/day 5-fluorouracil (5FU) alone was given. If a response to 5FU was not obtained within 2-3 wk, cytosine arabinosides 10 mg/day combined with 5FU and mitomycin C (MMC) 1-2 mg/day, or MMC alone were given. The infusion was continued as long as possible during the first 3 yr. Infusion of 5FU was discontinued within 1-3 mo and treatment was maintained with Ftorafur 200 mg/day po. After 1973, adriamycin 5-10 mg/day, or carbazilquinone 1-3 mg/day, was also given in place of 5FU. Of 84 patients with unresectable or recurrent stomach carcinoma who received intra-aortic infusion, 74 were evaluated. Response rate was better in simple peritoneal dissemination type than in other types. Patients with rectal carcinoma responded better than those with colon carcinoma. Duration of response in treated stomach cancer patients was only 1-3 mo. Toxicity was less than with other methods of chemotherapeutic administration. (21 Refs)

SELECTED CLINICAL CORRELATIONS

35. IMMUNOLOGIC, CLINICOPATHOLOGIC AND PROGNOSTIC FEATURES OF LYMPHOMA OF THE GASTROINTESTINAL TRACT.

Minato K, Shimoyama M, Saito H, Watanabe S
Sect. Hematology, Natl. Cancer Center Hosp., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo 104, Japan
Jpn J Clin Oncol; 11(2):353-362 1981

Surface marker characteristics of lymphoma cells from 32 patients with histopathologically proven malignant lymphomas with gastrointestinal tract (GI) involvement were investigated. Of 12 patients with primary lymphoma of the GI tract, 6 patients presented with masses in the stomach, 1 patient with a mass of the duodenum, 3 with masses in the ileocecal region, and 2 with multiple tumors of the GI tract. In only 1/12 cases were tumor cells found to have no surface Ig (SIg), and to have E-rosette-forming capacity (ERFC) and human T-lymphocyte antigen (HTLA). Of the 11 other non-T lymphomas, 7 were positive for SIg, 2 were negative, and 2 were undetermined. In the seven B-cell lymphomas, SIg were mu heavy chain in four and gamma chain in three. All non-T lymphoma cells had Ia-like antigen. Of the 20 patients with secondary lymphoma of the GI tract, 6 patients had masses only in the stomach, 1 had masses in the small intestine, and two only in the ileocecal region. In 3/20 cases, tumor cells had no SIg, but had ERFC and/or HTLA. No T-cell markers were found in the other 17 cases. Of these, SIg were detected in eight cases bu not in five cases. All the cases examined, including T-cell type cases, showed Ia-like antigen. (22 Refs)

36. LYMPHOID HYPERPLASIA OR PSEUDOLYMPHOMA OF THE STOMACH.

Babin P
Servie d'Anatomie et Cytologie Pathologiques, Hopital Jean-Bernard, C.H.U., F-86021 Poitiers, France
Gastroenterol Clin Biol; 5(11):973-976 1981

The histologic and immunologic characteristics of gastric lymphoid hyperplasia are reviewed. Microscopically the mucosa is fragile and is spotted with ulcerations. The glands lie on a chorion that is distinctly hyperplastic, pseudotumoral, and inflammatory. The infiltrate can be diffuse and have disseminated areas of lymphoid follicles with germinative centers. The submucosa may be infiltrated with lymphoid cells mixed with eosinophiles but the most important characteristic for establishing a benign condition is the presence of lymphoid follicles with germinative centers. Immunologic analysis of pseudolymphomas reveals the predominance of IgA with groupings of polyclonal IgM within the germinative centers. Electron microscopy reveals nontumoral lymphoid cells and peroxydase visualization of polyclonal markers. Less specific histoenzymatic studies reveal rare esterase and peroxydase positive cells in the germinative centers and the chorion. (22 Refs) (In FRE)

37. CAUSES OF HEPATIC METASTASIS AND RECURRENCE OF CANCER IN THE LIVER AND PREVENTING THEM.

Takahashi T, Furushima K, Takahashi T, Tamura S, Ohta H

Dept. Surgery, Cancer Res. Inst. Affiliated Hosp., 1-37-1 Kami-ikebukuro, Toshima-ku, Tokyo 170, Japan

Nippon Rinsho; 39(5):154-161 1981

Incidence and treatment of hepatic metastasis and recurrence was studied in 381 patients with colon cancer and 714 patients with rectal cancer who were treated surgically. Hepatic metastasis was observed in 49 patients with colon cancer and 72 patients with rectal cancer. Of the 49 patients with hepatic metastasis and colon cancer, 23 had primary tumors greater than 5 cm, 30 had circumferential tumors, 41 had lymph node metastasis, and 29 had clear evidence of intestinal wall invasion. Of the 72 patients with hepatic metastasis and rectal cancer, 38 had primary tumors greater than 5 cm, 37 had circumferential tumors, 58 had lymph node metastasis, and 39 had clear evidence of intestinal wall invasion. Histological examination of tumor specimens from 290 patients with colon cancer and 578 with rectal cancer showed that papillotubular cancer was the type most frequently observed in patients with hepatic metastasis. Causes of the hepatic metastasis were thought to be (1) distribution of cancer cells during surgery via the portal vein, (2) micro-tumors already existing in the liver prior to surgery, or (3) residual tumor or recurrent tumor causing secondary formation of hepatic metastasis. Prevention of blood-born metastasis with combination chemotherapy has not been successful thus far. (5 Refs) (In JPN)

38. THERAPEUTIC EMBOLIZATION OF THE GASTRODUODENAL ARTERY IN HEPATIC ARTERY INFUSION CHEMOTHERAPY.

Kuribayashi S, Phillips DA, Harrington DP, Bettmann MA, Garnic JD, Come SE, Levin DC

(c/o Levin) Dept. Radiology, Harvard Medical Sch., Brigham and Women's Hosp., Boston, MA, 02115

AJR; 137(6):1169-1172 1981

Transcatheter embolization of the gastroduodenal artery with Gelfoam was performed in 12 patients undergoing percutaneous hepatic artery catheterization for infusion chemotherapy of metastatic liver disease. The purpose of the embolization was to prevent chemotherapeutic drugs from reaching the stomach and duodenum and thereby inducing gastrointestinal toxicity in patients in whom the catheter tip could not be satisfactorily positioned beyond the gastroduodenal origin. Embolization proved safe and effective in eight cases. Three other patients experienced clinical problems that may or may not have been related to embolization. The final patient had a significant complication (necrosis of the pancreatic head and gastric mucosa) that was felt to be directly related to the embolization. Transcatheter gastroduodenal occlusion may help reduce gastrointestinal toxicity of intraarterial infusion chemotherapy. However, it may on occasion be associated with significant complications, particularly in patients who are debilitated due to metastatic disease. (Author abstract) (14 Refs)

REHABILITATION ASPECTS

39. ACUTE POLYMYOPATHY DURING TOTAL PARENTERAL NUTRITION.

Stewart PM, Hensley WJ

Dept. Biochemistry, Royal Prince Alfred Hosp., Sydney, New South Wales, Australia

Br Med J; 283(6306):1578 1981

Occurrence of acute polymyopathy during total parenteral nutrition was investigated in four patients. Patients 1, 2, and 3 showed symptoms of muscle pain, tenderness, swelling, and tachycardia while receiving parenteral nutrition. The ratio of 5,8,11-eicosatrienoic acid to arachadonic acid was abnormal. Lipid supplementation had been administered initially to patient 1 but then discontinued; patients 2 and 3 received no lipid supplementation. Patient 4 received total parenteral nutrition after gastrectomy for carcinoma of the stomach. On day 29 muscle pain and tenderness developed. On day 32 lipid infusion was started; symptoms, including the eicosatrienoic:arachadonic acid ratio eventually normalized. While the cause of the myopathy was not established, deficiency of essential fatty acids probably played a part. Lipid supplementation seems to prevent and reverse the myopathy without the need to stop the nutritional support. (3 Refs)

40. NONSURGICAL INTERNAL BILIARY DRAINAGE BY ENDOPROSTHESIS.

Burcharth F, Efsen F, Christiansen LA, Hancke S, Jensen LI, Nielsen OV, Pedersen JH, Pedersen G

Dept. Surgical Gastroenterology, Herlev Hosp. and Rigshospitalet, Univ. Copenhagen, Copenhagen, Denmark

Surg Gynecol Obstet; 153(6):857-860 1981

Insertion of an endoprosthesis for internal biliary drainage was attempted upon 150 patients with obstructive jaundice. It was successful in 123 patients, and 99 patients had permanent drainage with the endoprosthesis. The plasma bilirubin level became normal in 64 of the patients. The effect upon jaundice was equal to that in 43 patients who underwent operation with palliative surgical bypass. The median survival time was not different from that for the patients with surgical anastomoses. Twenty-eight patients died in the 1st mo after insertion, mostly of advanced malignant disease. Fifteen of the patients in the group with surgical anastomoses died within the first mo. The insertion of an endoprosthesis for bile duct obstruction is relatively easy and seems to have little risk. Most complications are caused by the transhepatic cholangiography procedure. The method may be used for temporary drainage before operation, in transient benign obstructions or as permanent drainage in unresectable lesions. In patients with dislodgement or insufficient function, additional endoprostheses may be inserted. Thus, sufficient palliation of jaundice is achieved with a low frequency of cholangitis. Internal biliary drainage by insertion of an endoprosthesis is a valuable alternative to surgical bypass in patients with unresectable lesions. (Author abstract) (10 Refs)

41. PERCUTANEOUS ANTEGRADE BILIARY DRAINAGE: A NONOPERATIVE APPROACH TO BILIARY OBSTRUCTION.

Koven IH, Steinhardt MI, Reichstein B
Univ. Toronto, Ste. 449, 600 University Ave., Toronto, Ontario M5G 1X8, Canada
Can J Surg; 24(6):591-593 1981

Twenty-seven patients underwent percutaneous antegrade biliary drainage for obstructive jaundice. The serum bilirubin level was elevated in all patients. Generalized pruritus was a major complaint. Twenty of the patients had had a laparotomy for malignant disease. Of the 24 patients in whom this method of drainage was successful, the obstructing lesion was found at the porta hepatis in 12 and in the extrahepatic bile ducts in 12. Metastatic disease was the commonest cause of obstruction. Following drainage the serum bilirubin level fell from a mean of 21.4 mg/dl (366 umol/l) to a mean of 4.1 mg/dl (70.1 umol/l) within a wk. Pruritus was relieved. The major complications were transient cholangitis in five patients and inadvertent dislodgement of the catheter in four. In three of these patients another catheter was reinserted with ease. There was no peritonitis or uncontrolled bleeding. Twenty-one patients were able to leave the hospital. Their mean survival time was 7.3 mo. A multiperforated catheter manipulated through the obstruction has the advantage of permitting bile flow into the duodenum (antegrade) in contrast to external drainage (retrograde) by T- or U-tubes. Although the mean survival time with this method is similar to that with insertion of drainage tubes at the time of laparotomy, morbidity and mortality are reduced; this is important in view of the poor prognosis of bile duct obstruction due to malignant disease. (Author abstract) (10 Refs)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

42. SCLERODERMA AND ESOPHAGEAL CARCINOMA: CHROMOSOMAL ABNORMALITIES IN A PATIENT.

Nissenblatt MJ, Ludwig S, Feinsmith N, Sciorra L
Middlesex General Hosp., 180 Somerset St., New Brunswick, NJ, 08901
NY State J Med; 81(12):1748-1750 1981

A link between progressive systemic sclerosis (PSS) and neoplasia is suspected. Scleroderma is a chromosomal breakage syndrome. A case history is presented of a patient with esophageal carcinoma diagnosed 14 mo after clinical onset of PSS. Chromosome aberrations (CA) were demonstrated in somatic cells. A causal relationship between CA and neoplasia is suggested. (20 Refs)

43. TWO FAMILIES WITH CANCER FAMILY SYNDROME.

Bulow S, Svendson LB, Shannon Danes B
Kirurgisk-gastroenterologisk afdeling, Bispebjerg hospital, Copenhagen, Denmark
Ugeskr Laeger; 143(42):2716-2718 1981

Cancer family syndrome (CFS) in two families is reported. One family had 30 members in 4 generations, and reliable information is available on 29 members. Cancer was found in 11/29 cases (4 men and 7 women, age at the manifestation of the first cancer 33-38 yr, av 56 yr). The tumors included four colorectal carcinomas, four solitary colorectal adenomas, one skin cancer, two breast cancers, one gastric cancer, and one cancer of uterine cervix. Two primary cancers were found in one patient. Increased tetraploidy of skin fibroblasts, investigated in 13/29 cases, was found in 6/13 family members, 2 of whom were affected by cancer. The other family included 25 members in 4 generations; reliable information is available for 23 family members. Six members of this family, including three men and three women, had cancer: nine colorectal cancers and one retroperitoneal malignant tumor were diagnosed. There were 10 primary malignant tumors. The age of the patients at the time of manifestation of the first tumor was 37-51 yr (av 41 yr). Increased tetraploidy of kin fibroblasts, investigated in 10 family members, was found in 5/10 cases, including in 2 cancer patients. (8 Refs) (In DAN)

44. GASTRIC STUMP CANCER AFTER PREVIOUS RESECTION FOR BENIGN ULCER.

Hellers G, Ewerth S, Ost A
Kirurgiska kliniken, Huddinge sjukhus, S-141 86 Huddinge, Sweden
Lakartidningen; 78(39):3392-3394 1981

The incidence of gastric stump cancer after gastric resection for ulcer was studied in the Stockholm area. Questionnaire data were obtained for 3,623 subjects in the age bracket 40-89 yr, who were selected at random from the population. Fifty-nine of these patients had been operated on for gastric ulcer more than 15 yr ago. They included 44 men and 15 women. A total of 709 cases of gastric cancer were diagnosed in the same area during the period 1975-1977. Eighty-seven of these patients had been submitted to gastric resection for gastric ulcer more than 15 yr ago. They included 65 men and 22 women. Their gastric cancer incidence (per 100,000 population) was 5-6 times higher than in the general population, increasing with increasing interval after resection, but not with age: the incidence was 4.5 times higher for intervals of 15-19 yr and approx 25 times higher for intervals of 40-44 yr. (7 Refs) (In SWE)

45. CANCER AFTER GASTRIC RESECTION: THE RESPONSIBILITY OF PHYSICIANS AND POLITICIANS?.

Reichard H, Ost A
Medicinklinik IV, Sodersjukhuset, Stockholm, Sweden
Lakartidningen; 78(39):3369-3370 1981

There are approx 10,000 patients in Stockholm who had been subjected to gastric resection for gastric ulcer at least 15 yr ago, including approx 3,000 under the age of 60 yr. The risk of gastric cancer in such patients is 20x higher than in the normal population of the same age, reaching about 0.5%/yr at the age of 70 yr and 1%/yr at the age of 80 yr for a patient operated on at the age of 35 yr. Radiology is of little value in the diagnosis of changes in the operated stomach, but endoscopy, preferably combined with biopsy, is efficient. Early gastric cancer can thus be detected in up to 40% of the patient, and such patients have a 5-yr survival rate of 90% after radical surgery. Yet, the incidence of early gastric cancer has been only 7% at the Stockholm hospital during the 1970s. It is recommended that all patients who had been subjected to gastric resection for gastric ulcer at least 15 yr ago, and who would qualify for gastrectomy, should be submitted to gastroscopy and gastric biopsy at 1-3 yr interval until the age of 70 yr. (5 Refs) (In SWE)

46. CARCINOMA OF THE GASTRIC STUMP AFTER GASTRECTOMY FOR PEPTIC ULCER: REPORT OF 9 CASES.

Lou G, Zhu Z, Cao W, Fu P

Dept. Surgery, Ruijin Hosp., Shanghai Second Medical Coll., Changhai, People's Republic of China

Zhonghua Waike Zazhi; 19(3):155-156 1981

Carcinoma of the gastric stump after gastrectomy is described for 5 cases of duodenal ulcer and 4 cases of gastric ulcer. All of the patients were males and were among 676 cases of gastric cancer treated during the period 1972-1978. The Billroth I operation was performed in two cases; the Billroth II operation was performed in the rest of the series. Diagnosis of gastric stump cancer was established 5.25-21 yr after gastrectomy; this interval was shorter than that reported in the literature (av, 16-28 yr). Most of the cancers were adenocarcinomas and most occurred at the gastric cardia. Results of the study indicated that there was a relationship between type of anastomosis and occurrence of gastric stump cancer, with the Billroth II technic more prone than the Billroth I to gastric stump cancer. The sites of the original ulcers did not seem to have any relationship to gastric stump cancer occurrence. Diagnostic problems and prognosis of carcinoma of the gastric stump are discussed. (7 Refs) (In CHI)

47. PRIMARY GASTRIC LYMPHOMA FOLLOWING RENAL TRANSPLANTATION.

McTamaney JP, Neifeld JP, Mendez-Picon G, Lee HM

(c/o Neifeld), Medical Coll. Virginia, P.O. Box 11, MCV Station, Richmond, VA, 23298

J Surg Oncol; 18(3):265-268 1981

A renal allograft recipient was diagnosed as having a primary gastric lymphoma 11 yr following transplant. Pathology showed a large cell diffuse (histiocytic) lymphoma with lymph node metastases. Pulmonary metastases developed despite curative resection and adjuvant radiation therapy. An aggressive approach to the evaluation of abdominal symptoms following transplantation is indicated to attempt early diagnosis of gastrointestinal malignancies and to allow prompt treatment. (Author abstract) (10 Refs)

48. HEPATOCELLULAR CARCINOMA AND HEPATITIS B VIRUS. A PROSPECTIVE STUDY OF 22,707 MEN IN TAIWAN.

Beasley RP, Lin CC, Hwang LY, Chien CS

Univ. Washington Medical Res. Unit, 15-2 Kung Yuan Road, Taipei, Taiwan

Lancet; 2(8256):1129-1133 1981

A prospective general population study of 22,707 Chinese men in Taiwan has shown that the incidence of primary hepatocellular carcinoma (PHC) among carriers of hepatitis B surface antigen (HBsAg) is much higher than among non-carriers (1,158/100,000 vs 5/100,000 during 75,000 man-yr of follow-up). The relative risk is 223. PHC and cirrhosis accounted for 54.3% of the 105 deaths among HBsAg carriers but accounted for only 1.5% of the 202 deaths among non-carriers. These findings support the hypothesis that hepatitis B virus has a primary role in the etiology of PHC. (Author abstract) (25 Refs)

49. CLUSTERING OF HEPATITIS B VIRUS INFECTION AND HEPATOCELLULAR CARCINOMA IN A FAMILY.

Gilmore IT, Harrison JM, Parkins RA

Royal Liverpool Hosp., Liverpool L7 8XP, England

J R Soc Med; 74(11):843-845 1981

Family clustering of primary hepatocellular carcinoma (HCC) is well recognized, although rare. One possible reason for such clustering has become apparent since the advent of tests to detect circulating markers of hepatitis B virus infection, and this has been the common etiological factor in three families studied. We report the results of screening a Chinese family following the death of one member who had been found to have HCC associated with hepatitis B surface antigenemia. Four of seven siblings were traced: one had died of HCC 5 yr earlier, and evidence of past or present hepatitis B infection was found in the remaining three, one of whom was also found to have HCC. (Author abstract) (24 Refs)

50. COMPLETE REGRESSION OF HEPATOCELLULAR ADENOMA AFTER WITHDRAWAL OF ORAL CONTRACEPTIVES.

Steinbrecher UP, Lisbona R, Huang SN, Mishkin S

(c/o Mishkin) Royal Victoria Hosp., 687 Pine Ave. West, Montreal, Quebec H3A 1A1, Canada

Dig Dis Sci; 26(11):1045-1050 1981

A 28-yr-old woman who complained of mild abdominal pain was found to have a large liver tumor. Angiography and needle biopsy established the diagnosis of hepatocellular adenoma. The tumor was felt to be unresectable because of its size, and no treatment was given other than withdrawal of oral contraceptives. Subsequent hepatic scintiscans documented complete resolution of the tumor over a 12-mo period. (Author abstract) (21 Refs)

51. HEMANGIOENDOTHELIAL SARCOMA OF THE LIVER AFTER THOROTRAST INJECTION.

Hiraoka T, Kambara T, Morinaga T, Nakagawa S

(c/o Kambara) Dept. Pathophysiology, Toxicology Inst., Kumamoto Univ. Medical Sch., Honjo 2-2-1, Kumamoto 860, Japan

Acta Pathol Jpn; 31(5):853-861 1981

An autopsy case of hemangioendothelial sarcoma of the liver which occurred 33 yr after the injection of thorotrast was reported. A 59 yr old male with a complaint of abdominal swelling and progressive jaundice died of hepatic failure and hemorrhage from gastric ulcer after 10 days of medical treatment in the Kumamoto University Hospital. Autopsy revealed hemangioendothelial sarcoma and multiple capillary hemangiomas in the liver. Histologically, a yellowish brown crystalline substances was intensively accumulated in the connective tissue in and adjacent to the thickened capsule of the liver, the lymph nodes of hepatic hilus, the spleen, the bone and the bone marrow. The material was certified as thorotrast with the Th-232 activity measurement and the autoradiographical examination. The absorbed dose of irradiation of the local liver tissue was calculated to be approx 2,597 rads in 33 yr. The relation among capillary hemangioma, hemangioendothelial sarcoma, and thorotrast was discussed. (Author abstract) (30 Refs)

52. THE HEALTH EFFECTS AND ECOLOGICAL SIGNIFICANCE OF CHLORINE RESIDUALS IN WATER.

Kalmaz EV, Kalmaz GD
Univ. Tennessee, Univ. Station 8163, Knoxville, TN, 37916
Chemosphere; 10(10):1163-1175 1981

Effects of chlorine residuals and organic compounds in drinking water and aquatic environments, particularly direct toxicity and/or carcinogenicity to human and aquatic life, are reviewed. Significant correlations between surface water chlorination and cancer mortality rates have been shown in humans. Elevated rates of bladder, rectal, colon, and gastrointestinal cancers in humans served by chlorinated water from the Mississippi River have been demonstrated. The use of chlorinated surface waters in Ohio was associated with stomach cancer in males and females, and with bladder cancer in males. Chloramine has been shown to be an extremely weak mutagen; involvement of DNA is suggested, since DNA-repair mutants are sensitive to the agent. In uremic patients, shortened RBC survival and hemolysis have been attributed to chlorinated tap water used in hemodialysis. Effects on aquatic life of chlorine residuals are reviewed. While more than 300 chlorinated organic compounds have been identified in chlorinated potable waters, cooling waters, and sanitary effluents, relatively little is known about their ecological effects. Laboratory research using animal models should focus on the chloramines and their effects on health. (65 Refs)

53. ASSOCIATION OF DIET AND PLACE OF BIRTH WITH STOMACH CANCER INCIDENCE IN HAWAII JAPANESE AND CAUCASIANS.

Kolonel LN, Nomura AM, Hirohata T, Hankin JH, Hinds MW
Epidemiology Program, Cancer Center Hawaii, Univ. Hawaii, 1236 Lauhala St., Suit e 407, Honolulu, HI, 96813
Am J Clin Nutr; 34(11):2478-2485 1981

Stomach cancer incidence rates were compared among four groups: Japanese in Japan, Japanese in Hawaii, Caucasians in Hawaii, and all American whites. The highest rates at all ages occurred in the Japan Japanese, followed next by the Hawaii Japanese. Hawaii Caucasians tended to have similar age-specific rates to American whites in general. When the Japanese and Caucasians in Hawaii were divided by place of birth, the Japanese migrants to Hawaii had higher age-adjusted incidence rates than the Japanese born in Hawaii, while the Caucasian migrants to Hawaii (chiefly from the United States mainland) had lower rates than the Caucasians born in Hawaii. Examination of dietary data in relation to the place-of-birth-specific incidence rates showed positive associations of stomach cancer with consumption of rice, pickled vegetables, and dried/salted fish, and a negative association with vitamin C intake. The results are consistent with the particular hypothesis that stomach cancer is caused by endogenous nitrosamine formation form dietary precursors, and that vitamin C may protect against the disease. (Author abstract) (43 Refs)

54. ESOPHAGEAL CANCER ASSOCIATED WITH GASTRIC CANCER.

Kato H, Iizuka T, Watanabe H, Hirata K, Saito T, Hirashima T, Itabashi M, Hirota T
Dept. Surgery, Natl. Cancer Center Hosp., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo, Japan
Jpn J Clin Oncol; 11(2):315-320 1981

The association of esophageal cancer with gastric carcinoma in Japan is discussed. Of 1,137 esophageal cancer patients, 44 also had primary gastric cancer (3.9%). Seventeen of these patients had more than three primary malignant neoplasms. Of these 44, no patient had a past history of radiation or immunosuppressive therapy. Twenty-one patients had siblings or parents with cancer. Thirty-seven were smokers, 30 of whom had been smoking more than 10 cigarettes/day for more than 20 yr. Thirty-six drank alcohol, 33 of whom drank more than 10 ml of alcohol/day for more than 20 yr. There were 11 patients who had more than three primary cancers including primary esophageal and gastric cancers. Six patients had one or more primary cancers in both esophagus and stomach. Four had more than four cancers in the two organs. Most esophageal cancers were found in the middle thoracic region. All patients who survived for significant periods received surgical treatment for both cancers. (12 Refs)

55. NITRATE CONTENT OF DRINKING WATER AND MALIGNANT TUMORS OF THE DIGESTIVE ORGANS AND URINARY BLADDER.

Takacs S, Gomori A

Borsod megyei Kozegeszsegugyi-Jarvanyugyi Allmoas, Miskolc, Hungary

Egeszsegtudomany; 25(3):235-247 1981

Relationships between the av nitrate content in drinking water and the incidence of malignant tumors of the esophagus, stomach, large intestine, liver, rectum, and urinary bladder were studied on the basis of 2,755 cases reported during the period 1953-1980 from seven townships and five towns in a country in Hungary. There have been no appreciable changes in the nitrate levels in drinking water during the investigation period. The incidences (per 100,000 population) were 24.4 in men and 5.67 in women for esophageal tumors, 421.9 in men and 202.9 in women for gastric tumors, 84.6 in men and 78.7 in women for tumors of the large intestine, and 102.8 in men and 77.1 in women for rectal tumors. Patients in the age bracket under 40 yr accounted for 4.1% of all cases, patients in the age bracket 40-59 yr for 27.5%, and patients older than 60 yr for 68.4%. The nitrate level in the drinking water exceeded 100 mg/liter for 68.6-72.1% of the patients with digestive tract tumors, and for 54.7% of the patients with bladder tumors. The incidence of digestive tract tumors was highest at nitrate levels in the range of 100-200 mg/liter (-3.4-43%). The findings call for further epidemiological and physiological investigations. (15 Refs) (In HUN)

56. POWER CONSIDERATIONS IN EPIDEMIOLOGIC STUDIES OF VINYL CHLORIDE WORKERS.

Beaumont JJ, Breslow NE

Industrywide Studies Branch F-8, Natl. Inst. Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, OH, 45226

Am J Epidemiol; 114(5):725-734 1981

Nine retrospective mortality studies of workers exposed to vinyl chloride were reviewed to determine whether differences in their hypothesis testing results might be due to differences in statistical power. Where possible, the power of each study was calculated for cancer of the lung, brain and liver. When power was taken into consideration, the results for liver and brain cancer were found to be consistent with an etiologic role for vinyl chloride. For lung cancer, the data were not consistent with an etiologic role, in that two studies with very high power yielded negative results. (Author abstract) (16 Refs)

57. RETHINKING THE ENVIRONMENTAL CAUSATION OF HUMAN CANCER.

Higginson J
International Agency Res. on Cancer, 150 cours Albert Thomas, 69372 Lyon Cedex 2, France
Food Cosmet Toxicol; 19(5):539-548 1981

Epidemiologic studies concerning the etiology of environmental cancers are reviewed. The results of a number of studies strongly suggest that most human cancers are related to environmental factors and not to racial or hereditary factors. The results of the author's survey in South Africa further suggested that 'way of life' was of major significance for many cancers, especially those of the gastrointestinal tract and endocrine-dependent organs. Although there are many factors involved in its etiology, cancer may be prevented by controlling a single predominant factor. Only a small part of the total cancer burden can be directly related to ambient environmental pollution, and a number of other environmental factors, particularly diet, must be considered for the majority of environmental cancers. Although the role of dietary factors in promotion and enzyme induction of cancers is well established in laboratory animals, their role in man is much less clear. Most epidemiologists do not consider human environmental cancers in terms of single causes; human cancers for which there is evidence of multistage and multifactorial origin include lung, esophagus, liver, stomach and large intestine, breast and endometrium, Burkitt's lymphoma, and nasopharyngeal carcinoma. (106 Refs)

58. CHEMICAL AND ENVIRONMENTAL AGENTS IN GASTROINTESTINAL CARCINOGENESIS.

Deschner EE, De Cosse JJ, Sherlock P
Lab. Digestive Tract Carcinogenesis, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY, 10021
Clin Gastroenterol; 10(3):755-771 1981

A review is presented of incidence, risk factors, and chemical and environmental agents involved in induction or promotion of cancer of the gastrointestinal system. Presence of ingested agents in foods and experimental and clinical evidence for cancer causation are discussed. Carcinogenesis is considered with respect to the esophagus (nitrosamines, mycotoxins, promotional factors), stomach (nitrites and polycyclic hydrocarbons, mycotoxins, agricultural products, polychlorinated biphenyls, experimental carcinogens), and large bowel (nitrites, aflatoxins, diet, carrageenan, chemical carcinogens: nitroso compounds, biphenyls, symmetrical 1,2-dialkylhydrazines and azoalkanes and azoxyalkanes). Chemicals with known gastric tumor induction capability in animals are tabulated from published reports. (74 Refs)

59. HOW HIGH A PERCENTAGE OF ENVIRONMENTALLY RELATED CANCER CASES CAN BE PREVENTED IN NORWAY?.

Langard S
Yrkesmedisinsk avdeling, Telemark sentralsjukehus, 3900 Porsgrunn, Norway
Tidsskr Nor Laegeforen; 101(28):1602-1606 1981

Approx 110,000 cases of cancer were recorded in Norway during the period 1966-1975. Esophageal cancer was diagnosed in 1.099 cases, gastric cancer in 11,702, cancer of the gastrointestinal tract in 9,270, rectal cancer in 4,670, cancer of the liver and bile ducts in 253, pancreatic cancer in 3,992, larynx cancer in 745, lung cancer in 7,608, prostate cancer in 10,835, renal cancer in 3,191, cancer of the bladder and urinary tract in 4,047, and malignant lymphoma in 3,336. The percentage of environmentally related, ie, preventable cancer was estimated after extrapolation to the 1979 incidence. According to the low estimate, 2,250 cases of cancer were attributable to smoking, 300 to alcohol consumption, and 150 to occupational exposure. (15 Refs) (In NOR)

SELECTED PRE-CLINICAL STUDIES

60. FORMATION OF TISSUE-BOUND N'-NITROSONORNICOTINE METABOLISM BY THE TARGET TISSUES OF SPRAGUE-DAWLEY AND FISHER RATS.

Brittebo EB, Tjalve H
Dept. Toxicology, Univ. Uppsala, Box 573, S-751 23 Uppsala, Sweden
Carcinogenesis; 2(10):959-963 1981

The way in which N'-[14C]nitrosonornicotine (NNN) selectively induces tumors in the nasal cavity and esophagus in Sprague-Dawley and Fisher rats was investigated. No major differences in distribution of radioactivity was seen in the two strains. In vivo and in vitro autoradiographic studies following iv injection of 14C-NNN demonstrated localization of tissue-bound metabolites in the mucosa of the nasal cavity, esophagus, tracheo-bronchial tree, and tongue. High levels of unbound radioactivity were found in Zymbal's gland and submaxillary, preputial, lacrimal, and tarsal glands. In vitro experiments in which tissue slices were incubated with 3 uM 14C-NNN, demonstrated marked formation of tissue-bound NNN metabolites by nasal mucosa, liver, and esophagus. Liver tissue also formed bound NNN metabolites, but to a lesser extent than nasal mucosa, whereas levels of bound metabolites in esophagus cultures were almost undetectable. The results suggest that in situ metabolic activation of NNN plays an important role in the pathogenesis of NNN-induced tumors. (13 Refs)

61. EFFECT OF BILE ACID GAVAGE OR VAGOTOMY AND PYLOROPLASTY ON GASTROINTESTINAL CARCINOGENESIS.

Domellof L, Eriksson S, Mori H, Weisburger JH, Williams GM
Dept. Surgery, Univ. Hosp., S-901 85, Umea, Sweden
Am J Surg; 142(5):551-554 1981

Possible promotion of MNNG-induced gastrointestinal carcinogenicity was evaluated in male Wistar rats exposed to unconjugated bile acid given as gavage or as obtained through truncal vagotomy plus pyloroplasty. No significant difference was found compared with the relevant control groups. Even though gastroduodenal erosions were found more frequently in the bile acid gavage and MNNG groups than in MNNG-treated controls, secondary deconjugated bile acids apparently did not reach optimal promoting concentrations. In contrast to partial gastrectomy, vagotomy and pyloroplasty do not increase the tumor yield in the rat. (Author abstract) (23 Refs)

62. INHIBITION OF PANCREATIC CARCINOGENESIS BY RETINOIDS IN AZASERINE-TREATED RATS.

Longnecker DS, Curphey TJ, Kuhlmann ET, Roebuck BD
Dept. Pathology, Dartmouth Medical Sch., Hanover, NH, 03755
Cancer Res; 42(1):19-24 1982

Chemoprevention by retinoids of the progression of carcinomas induced in rats by azaserine was evaluated. Wistar/Lewis rats were given 15 weekly injections of azaserine, 10 mg/kg, while fed a chow diet; after the completion of carcinogen treatment, they were fed a chow diet supplemented with four different retinoids at the level of 0.5 to 2 mmol/kg diet for 1 yr. The incidence of neoplasms was determined by autopsy and histological study. The incidence of pancreatic carcinoma among a male positive control group (azaserine treated, but not retinoid treated) was 42%. The incidence of pancreatic carcinoma among male rats treated with retinoids was: N-2-hydroxyethylretinamide, 6%; N-4-propionyloxyphenylretinamide, 17%; and retinylidene dimedone, 12%. The incidence in rats fed these three retinoids was significantly (p less than 0.05) below the control group incidence. Thus, these three retinoids appeared to be effective in inhibiting the progression of pancreatic carcinomas in the azaserine-induced model. A similar trend was demonstrated in females, but statistical significance was shown only in rats fed N-2-hydroxyethylretinamide. A fourth retinoid, N-4-carboxyphenylretinamide, was more toxic and less effective in chemoprevention. Since retinoids were fed after exposure to carcinogen, the effect was exerted during the postinitiation phase of carcinogenesis. The ratio of invasive pancreatic carcinomas to localized carcinomas (carcinoma in situ) was clearly higher among non-retinoid-treated rats than among those treated with retinoids. This is consistent with retarded progression in the retinoid-treated groups. (Author abstract) (10 Refs)

63. PROMOTING EFFECT OF TESTOSTERONE PROPRIONATE ON EXPERIMENTAL EXOCRINE PANCREATIC TUMORS BY 4-HYDROXYAMINOQUINOLINE 1-OXIDE IN RATS.

Hayashi Y, Katayama H
Div. Pathology, Natl. Inst. Hygienic Sciences, 1-18-1 Kamiyoga, Setagaya-ku, Tokyo 158, Japan
Toxicol Lett; 9(4):349-354 1981

The promotion of 4-hydroxyaminoquinoline 1-oxide (HAQO) induced pancreatic tumors by androgenic hormone was tested in male and female rats. Three male (1m, 2m, and 3m) and three female groups (1f, 2f, and 3f) each consisting of 20 rats received 9 mg/kg iv injection of HAQO. Groups 1m and 1f received no further treatment. All other groups were castrated and subsequently given weekly sc injections of 1 mg testosterone propionate (groups 3m and 3f) or 0.1 ml olive oil (groups 2m and 2f). At 400 days the rats were autopsied and representative samples of pancreatic tumors were examined by electron microscopy. Eight exocrine adenomas of the pancreas developed in group 1m; six exocrine tumors developed in group 3m. One exocrine insuloma pancreatic tumor developed in group 1f and five were observed in group 3f. No exocrine adenomas of the pancreas developed in the control group or in groups 2m or 2f. Apparently testosterone can promote the induction of pancreatic tumors in rats by HAQO. (9 Refs)

64. THE EFFECT OF 4-SUBSTITUTION ON THE CARCINOGENICITY OF NITROSOPIPERIDINE.

Lijinsky W, Singer GM, Reuber MD
Chemical Carcinogenesis Program, Frederick Cancer Res. Center, Frederick, MD, 21701
Carcinogenesis; 2(10):1045-1048 1981

Nitrosopiperidine (NPIP), 4-phenylnitrosopiperidine, 4-cyclohexylnitrosopiperidine, and 4-tertiary-butylnitrosopiperidine were administered at equimolar (0.88) concentrations in drinking water, 5 days/wk, to groups of 20 female Fishcher 344 rats, for 50-60 wk. Like NPIP, both 4-phenyl- and 4-tertiary-butyl-NPIP induced esophageal papillomas and carcinomas in almost all animals, although time to death with tumors was considerably longer with the phenyl compound and still longer with the tertiary-butyl compound. Forestomach carcinomas occurred in 2/20 animals treated with 4-tertiary-butyl NPIP but in none of the animals treated with the other three compounds. Only 4-phenyl-NPIP induced liver tumor, 7 angiosarcomas and 14 hepatocellular carcinomas. Tongue papillomas (5) or carcinomas (7) occurred only in rats treated with 4-tertiary-butyl-NPIP. In general, NPIP induced tumors more quickly after administration of a smaller total dose than the other three compounds. The results indicate that all three derivatives of NPIP are considerably less carcinogenic than NPIP itself and that the 4-cyclo-hexyl derivative had no carcinogenic activity at the dose studied. The fact that only the 4-phenyl derivative induced liver tumors may be related to formation of phenolic compounds. (11 Refs)

65. DISTRIBUTION OF NUCLEAR SIZE AND DNA CONTENT IN SERIAL LIVER BIOPSIES OF RATS TREATED WITH N-NITROSOMORPHOLINE, PHENOBARBITAL AND BUTYLATED HYDROXYTOLUENE.

Romagna F, Zbinden G

Inst. Toxicology, Swiss Federal Inst. Technology, Univ. Zurich, Schorenstrasse 16, CH-8603 Schwerzenbach, Switzerland

Exp Cell Biol; 49(6):294-305 1981

Nuclear size distribution and DNA content distribution were determined in liver biopsies of rats using an electronic particle counter and an impulse cytophotometer, respectively. Nuclear size distribution and DNA content distribution were found to be highly correlated regardless whether peak areas or peak heights of the histograms were compared. Treatment with the hepatocarcinogen N-Nitrosomorpholine (NNM) caused a dose-dependent increase in octoploid nuclei and a shift of the 2 n:4 n ratio in favor of the diploid nuclei. Treatment with Pb and BHT had minor effects on nuclear size and DNA content distribution. The paper demonstrates the usefulness of fine-needle aspiration biopsy procedure for the evaluation of liver changes induced by chemical substances. (Author abstract) (13 Refs)

66. DOSE RESPONSES OF FIVE HEPATOCARCINOGENS FOR THE INITIATION OF RAT HEPATOCARCINOGENESIS.

Imaida K, Shirai T, Tatematsu M, Takano T, Ito N

First Dept. Pathology, Nagoya City Univ. Medical Sch., 1 Kawasumi, Mizuho-cho, Mizuho-ku, Nagoya 467, Japan

Cancer Lett; 14(3):279-283 1981

Dose response curves were generated for hepatocarcinogenesis in male Fischer 344 rats initiated by diethylnitrosamine (DEN), aflatoxin-B1 (AFB), N-2-fluorenylacetamide (FAA), 3'-methyl-4-dimethylaminobenzene (DAB), or dimethylnitrosamine (DMN). Two wk after initiation, animals were placed on a 0.02% FAA diet for 2 wk. Animals were partially hepatectomized (PH) at the end of wk 3 and killed at the end of wk 4. All five hepatocarcinogens exhibited clear dose response curves for initiation of hepatocarcinogenesis; both numbers and areas of hyperplastic nodules increased with increasing doses in all cases. AFB was the most potent initiator, and was effective at a dose as low as 0.25 mg/kg body wt. Sizes of nodules induced by DEN, FAA, and DMN were smaller than those induced by AFB and DAB. (12 Refs)

67. THE ACTIVATION OF AFLATOXIN B1 IN LIVER SLICES AND IN BACTERIAL MUTAGENICITY ASSAYS USING LIVERS FROM DIFFERENT SPECIES INCLUDING MAN.

Booth SC, Bosenberg H, Garner RC, Hertzog PJ, Norpoth K
(c/o Garner) Cancer Res. Unit, Univ. York, York Y01 5DD, England
Carcinogenesis; 2(10):1063-1068 1981

Activation of aflatoxin B1 (AFB1) was compared in two in vitro systems: binding to DNA in liver slices incubated with 14C- or 3H-AFB1 and in standard bacterial mutation systems using 9000 x gravity supernatant (S-9) fractions from uninduced livers for activation. The results were compared in several rodent species in an effort to correlate them with known trends in carcinogenicity. Covalent binding of 14C-AFB1 to DNA from liver slices showed the order rat greater than hamster greater than mouse. Phenobarbitone pretreatment of rats decreased binding, and binding of aflatoxin G1 (AFG1) was less than that of AFB1. These findings all were correlated with relative susceptibility to AFB1-induced hepatocarcinogenesis. An exception to this trend was the similar level of binding found in male and female rat livers. Levels of 3H-AFB1 binding to DNA in human liver biopsies ranged from 0.7-8.5 nanog AFB1/mg DNA, which was similar to the range seen in the mouse and hamster. Mutagenicity data did not correlate with carcinogenicity in relation to species differences, as the efficiencies of livers from the three species for activating AFB1 mutagenicity were hamster greater than rat greater than mouse. AFG1 mutagenicity generally was markedly less than that of AFB1 when activated by rat liver S-9. The correlation between AFB1 binding to DNA in liver slices in various rodent species and susceptibility to AFB1 hepatocarcinogenesis and its modification in the rat by phenobarbitone suggests that these differences are related to differences in metabolic activation of AFB1 to its reactive species, its subsequent detoxification, and macromolecular interaction. (30 Refs)

☆ U. S. GOVERNMENT PRINTING OFFICE : 1982—361-847/116

AUTHOR INDEX WITH CITATION NUMBERS

Asfaw I	31
Babin P	36
Bara J	24
Beasley RP	48
Beaumont JJ	56
Bettmann MA	38
Booth SC	67
Bosenberg H	67
Bourbeau D	4
Breslow NE	56
Brittebo EB	60
Bulow S	43
Burcharth F	40
Buroker T	31
Burtin P	24
Bussaka H	5
Campion JP	29
Camuzzini GF	22
Cao W	46
Cartia Q	22
Chan SH	14
Chen Q	18
Chien CS	48
Christiansen LA	40
Come SE	38
Curphey TJ	62
Dai Y	16
De Cosse JJ	58
Delarve D	29
Dent DM	7
Deschner EE	58
Dindogru A	31
Ding C	18
Dinges HP	6
Domellof L	61
Efsen F	40
Eriksson S	61
Ewerth S	44
Feinsmith N	42
Fontaine A	4
Franklin R	31
Fu P	46
Fujimura N	5
Furushima K	37
Garner RC	67
Garnic JD	38
Ghosn PB	4
Gillessen D	23
Gilmore IT	49
Goetz K	19
Gomori A	55
Gorden P	20
Gugler R	10
Gyr K	23
Hamada N	1
Hamelin L	24
Hancke S	40
Hankin JH	53
Harrington DP	38
Harrison JM	49
Hasegawa H	3
Hayashi Y	63
Hayashida Y	15
He D	16
Hellers G	44
Hendricks CM	20
Hensley WJ	39
Hertzog PJ	67
Higginson J	57
Higuchi T	21
Hinds MW	53
Hiraoka T	51
Hirashima T	54
Hirata K	54
Hirohata T	53
Hirota T	54
Hoerr SO	28
Hoschner D	31
Huang SN	50
Hwang LY	48
Iizuka T	54
Ikeda K	15
Illiger HJ	10
Imaida K	66
Itabashi M	54
Ito N	66
Jensen LI	40
Jiang K	18
Johnson PJ	12
Kahn CR	20
Kalmaz EV	52
Kalmaz GD	52
Kambara T	51
Kaneko Y	1
Katayama H	63
Kato H	54
Kawaji T	1
Kawaoi A	15
Kerbaol M	29
Kimura N	15
Kisner DL	32
Knechtges T	31
Kolonel LN	53
Kondo H	25
Koven IH	41
Kuhlmann ET	62
Kuhnau J	19
Kuribayashi S	38
Kuwabara N	8
Lang C	23
Langard S	59
Lapointe A	11
Launois B	29
Leandri R	11
Lechmann-van Ri	10
Lee HM	47
Leichman L	31
Levin DC	38
Lijinsky W	64
Lin CC	48
Lisbona R	50
Liu Z	18
Loh JJ	31
Longnecker DS	62
Lou G	46
Lu H	18
Ludwig S	42
Macdonald JS	30
Macdonald JS	32
Makizumi S	1
Makuuchi M	3
Mandelkow H	19
Martin E	24
Matsumura C	1
Matsuyama K	1
McTamaney JP	47
Megyesi K	20
Melia WM	12
Mendez-Picon G	47
Miller P	31
Minato K	35
Ming D	18
Mishkin S	50
Mori H	61
Morinaga T	51
Mugitani H	26
Nakagawa S	51
Nakagawara A	15
Nakamura T	21
Namiki M	33
Neifeld JP	47
Nesvetov AM	9
Nielsen OV	40
Nishi M	1
Nissenblatt MJ	42
Nomura AM	53
Nomura H	1
Norpoth K	67
Odawara R	1
Ohta H	37
Omotaka S	1
Ornitz R	30
Ost A	44
Ost A	45
Otsuka S	26
Palmer MK	12
Pan L	18
Parkins RA	49
Pedersen G	40
Pedersen JH	40
Phares W	17
Phillips DA	38
Pietruk T	31
Ping B	16
Portmann B	12
Potvin C	11
Quaranta L	22
Quercio M	22
Reichard H	45
Reichstein B	41
Reina G	2
Ren EC	14
Reuber MD	64
Rheault MJ	11
Roebuck BD	62
Rogers C	30
Romagna F	65
Rosenberg JC	31

Roth J 20
Roy P 4
Saito H 35
Saito T 54
Schein PS 30
Schein PS 32
Sciorra L 42
Sell S 13
Sellner F 6
Seydel H 31
Shannon Danes B 43
Sherlock P 58
Shi B 18
Shimoyama M 35
Shinbo T 26
Shirai T 66
Singer GM 64
Smith FP 30
Stalder GA 23
Steiger Z 27
Steiger Z 31
Steinbrecher UP 50
Steinhardt MI 41
Stewart PM 39
Suita S 15
Svendson LB 43
Takacs S 55
Takahashi T 37
Takahashi T 37
Takano T 66
Takao S 1
Taki K 8
Tamura S 37
Tao W 16
Tatematsu M 66
Tavera A 22
Tjalve H 60
Torres A 31
Uchino H 21
Vader CG 7
Vaishamapayan G 31
Vaitkevicius V 31
Vanderlaan M 17
Wang H 16
Watanabe H 54
Watanabe S 35
Weisburger JH 61
Williams GM 61
Williams R 12
Wilson RF 27
Wilson RF 31
Wooley PV 30
Wu g 16
Yamamoto S 1
Yamazaki S 3
Yata J 26
Yoshikawa K 34
Yu J 18
Zbinden G 65
Zelli GP 2
Zhdanov AS 9
Zheng B 16
Zhu Z 46

Keep Up with the Cancer Literature

Each Month You Can Receive Abstracts Covering Your Specialty Area

- This convenient service — called Auto SDI* — is as near as your nearest biomedical library. Discuss your research interests with the librarian who will design an appropriate search strategy.
- Abstracts of the latest published literature are searched automatically each month and those related to your interests are delivered to you on a regular basis.
- The abstracts you receive are selected from more than 4,000 monthly entries made into CANCERLIT — the extensive cancer literature data base of the National Cancer Institute.

Talk With Your Librarian About the Auto SDI Service TODAY.

---

*Auto SDI stands for Automatic Selective Dissemination of Information. It is a service provided to you, at minimal cost, by the International Cancer Research Data Bank (ICRDB) — a part of the National Cancer Institute.

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). CANCERGRAMS are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

U.S.MAIL

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT 19/82/05

NCI/ICRDB/CT19 82/05

PB82-939405

ICRDB CANCERGRAM

INTERNATIONAL CANCER RESEARCH DATA BANK

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/05

MAY, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy ***If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:***

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
JUN 9 1982
U. S. GOVT. PUBS.
DEPOSITORY 376

NOW AVAILABLE: COMPILATION OF EXPERIMENTAL CANCER THERAPY PROTOCOL SUMMARIES, 1982. FOR A COMPLIMENTARY COPY, CONTACT ICRDB PROGRAM, WESTWOOD BLDG., RM. 10A18, BETHESDA, MD. 20205

In this issue:

- SCREENING AND DIAGNOSIS 1-7
- PATHOLOGY, STAGING, AND PROGNOSIS 8-18
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS 19-34
- SURGICAL AND RADIATION THERAPY 35-38
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY 39-41
- SELECTED CLINICAL CORRELATIONS 42-45
- REHABILITATION ASPECTS 46-47
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER 48-64
- SELECTED PRE-CLINICAL STUDIES 65-72

SCREENING AND DIAGNOSIS

1. COST AND BENEFIT OF THE DETECTION OF EARLY GASTRIC CANCER.

Elffors L, Bromster D, Ust A, Reichard H, Dajani EZ, Bergemann W
Dept. Medicine IV, Sodersjukhuset, Stockholm, Sweden
Excerpta Med Int Congr Ser; 555:237-241,417 1981

Twenty-five patients (13 men, 12 women; mean age, 70 and 72, respectively) with early gastric cancer (EGC) underwent surgery during the past 10 yr. Gastrointestinal complaints were reported in 24 patients, 11 of whom had epigastric pain and 11 with signs of bleeding. Fourteen of the patients had a previous history of peptic ulcer disease, and two had been previously

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20. 3173/2:

operated on for EGC. During the latter part of the decade, endoscopy was increasingly used as the first and only diagnostic procedure. Operations performed included seven Billroth I resections, eight Billroth II resections, three gastrectomies (1 of whom had previously undergone a Billroth II resection), three re-resections with gastroenterostomy, and four local excisions. Four high-risk patients died in the immediate postoperative period, while five died after 2, 15, 18, 47, and 67 mo, respectively. Only one of the latter patients had evidence of cancer recurrence. Postoperatively 16 patients were alive 21-106 mo. Patients who have been operated upon for an EGC should be followed up by endoscopy, even when the patient is elderly, since local excision is effective in such patients. In younger patients, gastrectomy is recommended because of the risk of cancer recurrence. The increased use of endoscopy in this time period did not result in the discovery of more cancers at an nearly stage. (5 Refs)

2. ESOPHAGEAL CARCINOMA OBSERVED FROM EARLY TO ADVANCED STAGES WITH ESOPHAGOGRAMS.

Takagi I, Karasawa K
Second Dept. Surgery, Aichi Cancer Center Hosp., Aichi, Japan
Nippon Gan Chiryo Gakkai Shi; 16(4):656-663 1981

Seven cases of esophageal carcinoma were studied with the aid of esophagography from early to advanced stages, and the spread of the cancers both longitudinally and invasively through tissue layers were investigated. The cases of esophageal carcinoma occurred in six men and one woman (50-70 yr old). Three cases showed tumor growth at three different times during the course of the disease. Longitudinal growths of the tumors were measured by drawing lines that were parallel to the esophagus along the area of the tumors on esophagograms of the early and advanced stages. This method showed that the tumors became 2.3-4.3 cm (av 2.49 cm) longer during the 5-17 mo period of study. The mean linear function of these changes showed that the filling defects double in length in 5 mo (av 0.51 cm/mo). At the same time, histological depth of invasion of the carcinoma advanced very rapidly, and the rate of the spread to the adventitia differed very little between carcinomas originating in the mucosa and those originating in the submucosa. Esophageal carcinoma was thought to progress from early to advanced stages more rapidly than gastric cancer. (6 Refs) (In JPN)

3. ESOPHAGEAL CANCER EXTENSION. DIAGNOSTIC CONTRIBUTION AND EFFECTS ON THERAPY OF COMPUTED TOMOGRAPHY. REPORT ON 40 CASES.

Coulomb M, Lebas JF, Sarrazin R, Geindre M
Departement Universitaire de Radiologie du C.H.U. de Grenoble, F38700 La Tronche, France
J Radiol; 62(10):475-487 1981

Based on a homogeneous series of 40 cases of thoracic or abdominal esophageal cancer, of which 23 had been confirmed by operation, the authors analyze the contribution of the CT scan to the diagnosis of the extension of the cancer, and evaluation the effects on therapy of this technique. Computed tomography supplies much more precise and complete details of possible cancer extension than any other pre-operative investigation. Conducted after radiological and endoscopic examination of the esophagus, it supplies rapid, perfectly readable, irreplaceable information on local, regional, and metastatic spread of the cancer. This only slightly aggressive examination enables evaluation of the size of the tumor and its direct relationships, effective exploration of the mediastinal and celiac glands regions, and detection of possible pleural, pulmonary, or hepatic metastases. Its role in the decision to operate is a considerable one: true assessment of local, regional, or metastatic extension assists the surgeon in his choice of either curative or palliative therapy. Better still, it enables a route of approach to be decided as a function of data concerning possible extension, as well as the best surgical tactic. As a support for radiotherapy or chemotherapy for this type of cancer, computed tomography greatly assists follow-up supervision. (Author abstract) (26 Refs) (In FRE)

4. ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY USING A BALLOON CATHETER - PARTICULARLY ITS SIGNIFICANCE IN HEPATIC DUCT INVESTIGATION.

Ikeda S, Tanaka M, Yoshimoto H, Itoh H
First Dept. Surgery, Kyushu Univ. Faculty of Medicine, 3-1-1 Umaderi, Higashi-ku, Fukuoka 812, Japan
I To Cho; 16(11):1259-1265 1981

An end-hole balloon catheter (7 French size) was used in endoscopic retrograde cholangiography (ERC) to visualize hepatic ducts in seven patients (3 men, 4 women; 34-69 yr old). Prior to balloon catheter type ERC, visualization of the hepatic ducts was not possible with the aid of standard ERC due to overflow of injected contrast medium (30% Na diatrizoate) through patulous sphincters in two patients, through the endoscopic sphincterotomy orifice in three, through the sphincteroplasty in one, and through a cholecystoduodenostomy in one. Balloon catheter type ERC clearly visualized presence of hepatic stones in three of the patients, hepatic branches in three, and obstruction of the left hepatic duct associated with rigidity and irregularity of the bile duct wall in one. The obstruction of the left hepatic duct was found during laparotomy to be due to carcinoma. Indications for balloon catheter type ERC included cases of hepatic lesions (eg, hepatic stones and carcinoma) in which there was a loose or incompetent sphincter of Oddi, choledochoduodenal fistula, previous surgical sphincteroplasty, previous endoscopic sphincterotomy, or previous bilioenteric anastomosis. (7 Refs) (In JPN)

5. EVALUATION OF THE DOUBLE CONTRAST METHOD IN X-RAY DIAGNOSIS OF THE RESECTED STOMACH.

Coppola V, Verrengia D, Turco G, Muto R, Riccardi M
Istituto di Radiologia, II Facolta di Medicina e Chirurgia - Universita degli Studi di Napoli, Napoli, Italy
Minerva Dietol Gastroenterol; 27(4):527-532 1981

Of 219 patients with resected stomach, 128 had radiologic diagnosis confirmed by pathologic examination of biopsy material removed endoscopically, during surgery, or during autopsy. The double contrast method consisted of administration of N'-butylscopolammonium bromide (0.5 mg/kg iv), effervescent powder (2g po) producing 250 ml CO2, and Ba (50 ml) of high density and moderate viscosity. Radiography was performed changing the position of the patient, at time intervals. Of the 128 patients, double contrast radiography (DCR) misdiagnosed 55 patients and endoscopy misdiagnosed 32; the two methods combined resulted in misdiagnosis of only 15 patients. Of five malignant tumors, DCR misdiagnosed one and endoscopy two. Although DCR is the method of choice for diagnosis of the stomach in patients not treated surgically, DCR diagnosis cannot substitute for endoscopy in patients with resected stomach. Increased accuracy and better results in diagnosis of resected stomach may be obtained by combined DCR and endoscopic diagnoses. (20 Refs) (In ITA)

6. INVESTIGATION OF EARLY STAGE GASTRIC CARCINOMA WITH NUCLEAR MAGNETIC RESONANCE.

Yasuoka H, Satoh K, Hasegawa A, Yamagata H, Yorimitsu Y, Uchita Y, Kondo K, Iwata K
Inst. for Solid State Physics, Univ. Tokyo, Tokyo, Japan
Gan No Rinsho; 27(14):1743-1747 1981

Proton nuclear spin-lattice relaxation times (T1) of water molecules were determined in normal, ulcerous, and cancerous gastric tissues to see if there were differences in T1 values. Early stage tubular adenocarcinoma of the stomach (Type IIb or IIc) was diagnosed with the aid of biopsy in two patients (68-yr-old man and 54-yr-old woman), and gastric ulcers were diagnosed in one patient (66-yr-old man); T1 values were determined in tissues shortly after gastric lesions were resected. Approx 5 mm x 5 mm slices of surgical specimens were preserved at 0 C in nuclear magnetic resonance (NMR)-use glass tubes. T1 values were determined at room temperature within 6 hr of surgery, and the samples were then fixed in 10% formaline soln for pathohistological examination. T1 values were measured with pulse NMR technique at 30 megaHertz, corresponding to the field for 1H resonance of 7,046 Oersted. Surgical specimens were obtained from a 68-yr-old man with tubular adenocarcinoma, a 54-yr-old woman with tubular adenocarcinoma, and 66-yr-old man with gastric ulcer. T1 values differed according to the sample of even normal tissues, and T1 values were longer for cancerous tissues in the same sample. It was thought to be impossible to set fixed T1 values for determining whether or not a particular surgical sample is early stage cancer, b ut relative differences in T1 values in the same sample were thought to have diagnostic potential. Combining NMR and computed tomography was thought to be a possible means to directly image contrasting T1 values. (7 Refs) (In JPN)

7. DIAGNOSIS OF BILIARY TRACT DISEASE.

Thorbjarnarson B, Gray GF
New York Hosp., Cornell Univ. Medical Center, New York, NY
Major Probl Clin Surg; 16:3-18 1982

Differential diagnosis of prehepatic, hepatic, and posthepatic (PHJ) jaundice is described. PHJ is caused by tumors, stones, or strictures in the extrahepatic ductal system. In PHJ, pain and fever of biliary colic usually precede jaundice; dark urine, itching, and scleral icterus may be indicative of extrahepatic ductal system malignancy. History taking, physical examination, clinical and special tests, and liver biopsy for differential diagnosis of jaundice are discussed. Radiographic examination of the biliary tract through the use of percutaneous and retrograde cholangiography is considered. Intra-operative pathologic diagnosis of biliary tract disease is described. Well-differentiated adenocarcinomas (ADC) are the most common carcinomas of the biliary ducts, gallbladder, and ampulla of Vater. Because ADC cells closely resemble normal ductal epithelium, and their growth pattern mimics that seen in a number of benign conditions, the diagnosis of ADC may be difficult. Histologically, demonstration of permeation of the perineural space is the most reliable sign of ADC. Conditions that may be confused with bile duct and periampullary region ADC include sclerosing choledochitis, chronic pancreatitis, heterotopic pancreatic ducts, and ductal hyperplasia secondary to obstruction by calculus. Poorly differentiated carcinomas are morely easily recognized. Biopsies of lymph nodes may also be useful in establishing an intra-operative tissue diagnosis of carcinoma. (13 Refs)

PATHOLOGY, STAGING, AND PROGNOSIS

8. FREQUENCY AND EVOLUTION OF PRECANCEROUS AND DYSPLASTIC LESIONS IN THE STOMACH.

Martin ED
Dept. Pathology, Universite Paris, Hopital A. Beclere, Sed. 92141 Clamart, France
Excerpta Med Int Congr Ser; 555:225-230 1981

Precancerous conditions and lesions of the stomach are discussed with respect to hyperplastic and proliferative lesions and inflammatory and atrophic chronic gastritis. Gastric polyps are rare and are generally divided into two groups: the well differentiated or hyperplastic polyps rarely evolving into carcinoma, and the adenomatous or villous polyps capable of evolving into carcinoma in 15-40% of cases. The av frequency of the association of diffuse or localized hypertrophic gastritis of Menetrier to gastric carcinoma (GC) is about 5-6%. Of the 37 cases of gastritis glandularis and cystica profonda, 14 presented with foci of GC. The development of GC from gastric ulcers or scars of ulcers is rare (less than 1.96%). In 3.4-11% of gastrectomy patients, GC appears from 12-25 yr after gastrectomy. The risk of GC in patients with pernicious anemia is 5-20x that of the general population. The aforementioned lesions become precancerous when they are associated with intestinal metaplasias and dysplasias. It was estimated that 80% of the GC are found in patients without any known precancerous conditions. Whether all GC are preceded by precancerous lesions is unknown. The possibility that chronic gastritis is precancerous is discussed. The time between the discovery of chronic gastritis and the development of GC appears to be long, often more than 10 yr. More large and precise epidemiological, endóscopical, and histological coordinated studies are warranted. (19 Refs)

9. RELATIONSHIPS BETWEEN PANCREATICOBILIARY DUCTAL ANATOMY AND PANCREATIC DUCTAL AND PARENCHYMAL HISTOLOGY.

DiMagno EP, Shorter RG, Taylor WF, Go VL
Gastroenterology Unit., Mayo Clinic, Rochester, MN, 55905
Cancer; 49(2):361-368 1982

To determine whether ductal or parenchymal histologic abnormalities were related to the type of openings of the pancreatic duct and common bile duct into the duodenum, 390 unfixed human postmortem en bloc pancreaticoduodenal specimens were examined anatomically, radiographically, and histologically. In 353 specimens, ductal openings were classifiable: 25% had a well-defined ampulla, 18% a long common channel, 31% a short common channel, 7% an interposed septum, and 19% had separate openings for the pancreatic and bile ducts. Ductal histologic abnormalities were present in 25% of the specimens and most (77%) were found in the pancreatic head. When ductal openings were grouped according to the presence or lack of a prominent common channel, ductal epithelial abnormalities were more common in the absence of prominent common channel (30% vs 19%, p less than 0.04). Papillary epithelial hyperplasia was associated only with the absence of a prominent common channel ($p = 0.02$). Histologic abnormalities were more common in the elderly (p less than 0.005) but were not associated with cause of death or the presence of the minor pancreatic duct. Lack of a common channel is associated with abnormal ductal epithelium. This anatomic arrangement may be a factor in pancreatic carcinogenesis. (Author abstract) (15 Refs)

10. GASTRIC CARCINOMA. THERAPY AND PROGNOSIS. A REPORT OF A SURGICAL SERIES OF 235 CASES.

Chevillotte P, Cayot M, Favre JP, Trigalou D, Viard H
Clinique Chirurgicale, Hopital du Bocage, 2, Boulevard du Marechal-de-Lattre-de-Tassigny, 21034 DIJON cedex, France
Sem Hop Paris; 57(45/46):1941-1946 1981

In a series of 235 gastric cancer cases, 222 of them justified in doing an operation and 155 an excision. The operation mortality rate fluctuated between 25% and 10% according to the type of treatment. For the whole group a 5 years actuarial survival was 13.3%; 22.5% in the case of excision with the aim of curing. A study of prognosis factors brings out the favorable role played by tumors of the ulcerated type, not reaching the serous wall, without lymph embole in the wall, and of course without metastasis or extension at section cuts. (Author abstract) (21 Refs) (In FRE)

11. INTRAPERITONEAL FREE CANCER CELLS AND PROGNOSIS IN GASTRIC CANCER.

Iitsuka Y, Kimura A, Kamasako A, Kudoh H, Maeta M, Kaibara N, Koga S, Tanida O
First Dept. Surgery, Tottori Univ. Sch. Medicine, Tottori, Japan
Gan No Rinsho; 27(15):1808-1812,A-88 1981

Peritoneal cytology (Douglas lavage method) was performed in gastric cancer patients. The test yielded positive results in 28% of 200 gastric cancer patients and 8.3% in those cured by operation. In the operatively cured group, the 3-yr cumulative survival rate was 92.1% in cases with intact serosa and negative cytology, and 52.6% in those with serosal involvement and negative cytology. In 10 patients with positive cytology, 7 died of cancer recurrence; peritoneal dissemination was found in 6. (17 Refs) (In JPN)

12. SURGICAL ASPECTS OF EARLY GASTRIC CANCER.

Schlag P, Decker R, Bergemann W, Merkle P, Maruyama M. Herfarth C, Heinkel K
Dept. Surgery, Univ. Ulm, Ulm, W. Germany
Excerpta Med Int Congr Ser; 555:281-285,425 1981

Preoperatively, alterations in early gastric cancers (EGC) were correctly classified as malignant in only 60% of surgical patients by roentgenological methods and in 70% by macroscopic gastroscopy. In 10% of the operated EGC, the malignancy of the change of the gastric mucosa was not even established preoperatively by endoscopic biopsy. Standardized surgical therapy must be instituted whenever the roentgenological or endoscopic suspicion of an early cancer arises. Because multicentric changes or discontinuous tumor growth were present in 11/101 patients with EGC in the patient pool, and none of these patients had been diagnosed preoperatively either by roentgenologic or endoscopic means, gastrectomy is advocated, even for apparently circumscript alterations in the distal third of the stomach. Most of these EGC were of the so-called diffuse tumor type, which has a particularly unfavorable prognosis. A more extensive surgical approach is indicated for the diffuse type tumors: subtotal gastric resection with preoperative exclusion of further changes by endoscopic examinations and postoperative endoscopic control of the remaining stomach is advocated. With polypous EGC, which has been endoscopically abraded with a diathermal loop with no evidence of remaining tumor, then the risk of possible lymph node metastases (less than 4%) must be considered against the risk of resective surgical intervention. An individualized approach to EGC is advocated with considerations of the age of the patient, the macroscopic tumor type, and the histological stage of differentiation, being of prime importance. (10 Refs)

13. CARCINOMA OF THE STOMACH: RESECTABILITY AND SURVIVAL RATES IN 408 OPERATED PATIENTS.

Moreaux J, Montupet P

Centre medico-chirurgical de la Porte de Choisy, 15, avenue de la Porte de Chtisy, F 75634 Paris Cedex 13, France

Nouv Presse Med; 10(38):3133-3136 1981

In 125 cases (30.6%) the tumor could not be removed, mainly because of peritoneal metastases and posterior extragastric extension. Tumoral resection was performed in 283 cases (69.4%), being palliative in 67 and considered as curative in 216 (52.9%). There were 177 distal gastrectomies, 40 proximal and 66 total gastrectomies with esophageal resection adapted to the extent of the tumor. Operative mortality was 2.1% after resection and 8% after exploratory and derivative surgery. The 5-yr survival rates among 213 patients operated on before December 1973, were 50.8% after curative resection, 39% for all resections and 27.7% for all patients who underwent surgery. The long-term prognosis was evaluated in relation to the site of the lesion, its depth of penetration into the gastric wall and its extension to the lymph nodes. Spreading superficial carcinomas had a 5-yr survival rate of 89.6% and their incidence (14% of all operated patients) did not change in recent years despite the increasing use of gastric endoscopy. Extension to the lymph nodes was a very important prognostic factor, since the 5-yr survival rate was 71% in patients with non-invaded primary lymph nodes, as opposed to 32% in patients with invaded primary lymph nodes and only 5% in patients with secondary node involvement. (Author abstract) (12 Refs) (In FRE)

14. GASTRIC LEIOMYOSARCOMA: CLINICAL AND PATHOLOGICAL REVIEW OF FIFTY PATIENTS.

Lindsay PC, Ordonez N, Raaf JH

(c/o Raaf) Dept. Surgery, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY, 10021

J Surg Oncol; 18(4):399-421 1981

Fifty patients with gastric leiomyosarcoma seen at M D Anderson Hospital between 1957 and 1978 were reviewed. Symptoms included weakness, gastrointestinal bleeding, and epigastric pain. An upper abdominal mass or tenderness was the most frequent physical finding. Laparotomy was performed in all patients, with gastric resection in 86%, and resection for cure in 68%. Survival after distal subtotal gastric resection (mean: 62 mo) was longer than after proximal subtotal (30 mo) or wedge resection (46 mo). The 5-yr survival was 19% for all patients, and 32% for those operated on for cure. A favorable prognosis was predicted by mild atypia or few mitoses (Grade 1). No differences in survival were demonstrated between patients with tumors of different cell types (epithelioid, spindle, or pleomorphic). No lymph node in any patient contained metastatic tumor, suggesting a lymph node dissection need not be performed. Commonly, tumor spread was to liver or lungs or by direct invasion of contiguous tissue or organs. Radiotherapy and chemotherapy are of limited value in treating unresectable disease. If possible, both the primary lesion and recurrent tumor should be widely resected. (Author abstract) (17 Refs)

15. MYOSARCOMAS OF THE STOMACH: NATURAL HISTORY, PROGNOSTIC FACTORS AND MANAGEMENT.

Shiu MH, Farr GH, Papachristou DN, Hajdu SI

Dept. Surgery, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY, 10021

Cancer; 49(1):177-187 1982

A retrospective study was made of 41 patients treated for gastric myosarcoma to identify prognostic factors that influence results. The adjusted 5-and 10-yr survival rates were 56% and 43% respectively, with no significant difference between leiomyosarcoma and malignant leiomyoblastoma. A histopathologic grade of malignancy could be assigned to each tumor according to the degree of hypercellularity, nuclear abnormality, mitotic rate and other characteristics. High histopathologic grade, large tumor size (greater than 5 cm diameter) and invasion of adjacent organs adversely affected prognosis. Five-yr survival after curative treatment was: 100% (9/9) for small tumors, of which six were treated by wedge gastric resection; 67% (8/12) for large tumors, mostly after subtotal gastrectomy; and 0% for tumors that invaded adjacent organs, despite extended resections. It is concluded that the management of gastric myosarcomas can be planned according to these prognostic factors and that multimodal therapy of tumors with adverse factors warrants consideration. (Author abstract) (26 Refs)

16. QUANTITATIVE STATISTICAL STUDIES OF LYMPH NODE METASTASIS OF GASTRIC CARCINOMA, WITH REFERENCE TO ITS RELATIONSHIP WITH THE PRIMARY LESION AND PROGNOSIS.

Haruyama K

Dept. Surgery, Sch. Medicine, Keio Univ., Shinjuku-ku, Tokyo 160, Japan

Nippon Geka Gakkai Zasshi; 82(6):612-621 1981

The relationship between primary lesions and lymph nodes with metastasis was studied in order to perform a rational lymph node dissection at the operation for gastric carcinoma. Lymph node metastasis in 625 cases of gastric carcinoma on which radical operations were performed was analyzed through the following approach. Rate of metastasis (RM): Number of cases with lymph node metastasis/number of cases with lymph node dissection; Frequency of metastasis (FM): Number of metastasized nodes/number of dissected nodes; Number of metastasized nodes (NM); Five-yr survival rates in terms of RM, FM and NM. The RM, FM and NM increased with the depth of invasion of the primary lesion into the gastric wall. The more infiltrative the gross appearance of the primary lesions, the higher were the RM, FM and NM. In the groups with vascular invasion determined histologically or undifferentiated adenocarcinoma, the RM, FM and NM were higher than those of the group without vascular invasion or well-differentiated carcinoma. The RM, FM and NM were shown to contribute heavily to the prognosis. The FM and NM were found to have a close relationship with the prognosis, especially in patients with lymph node metastasis. Five-yr survival rates for patients in whom the metastasis was evidenced by less than two lymph nodes were determined. There was no difference between the patients with lymph node metastasis limited to the perigastric region and the patients with lymph node metastasis beyond the perigastric region, ie the lymph nodes around the left gastric artery, the celiac artery and the common hepatic artery. (51 Refs) (In JPN)

17. REPORT OF 29 CASES OF CARCINOID OF THE SMALL INTESTINE IN A SERIES OF 116 PATIENTS WITH CARCINOID TUMORS.

Besson A, Saegesser F

Service de Chirurgie A, Centre Hospitalier Universitaire Vaudois, CH-1011 Lausanne, Switzerland

Ann Gastroenterol Hepatol; 17(6):441-446 1981

One hundred and twenty carcinoid tumors were found in 116 patients during the period 1954-1981. Twenty-five tumors were located in the bronchi, 2 in the stomach, 6 in the duodenum, 24 in the small intestine, 6 in Meckel's diverticulum, 45 in the appendix, 3 in the colon, 3 in the rectum, 5 in appendages of the digestive tract, and 1 in the ovary. Carcinoid tumors of the small intestine and Meckel's diverticulum were found in 29 patients (av age 67 yr, men-to-women ratio 2/1). The carcinoid tumors were symptom-producing in 13/29 patients: carcinoidosis was found as the first manifestation in 4 cases, intestinal occlusion in 6, and ischemic intestinal lesions in 3. The carcinoids in the remaining 16 patients were discovered fortuitously by microscopic examination of surgical specimens (2 cases) or autopsy specimens (3), during surgery for other tumor (6), and during laparotomy for other indications (5). Metastases were found in 24/116 patients, including in 14 patients with carcinoids of the small intestine and Meckel's diverticulum. Twenty-five second tumors were found in 23/116 patients, including 13 tumors in 11/29 patients with carcinoids of the small intestine and Meckel's diverticulum. Most of the second tumors were malignant. (24 Refs) (In FRE)

18. PANCREATIC CANCER.

Jordan GL

Baylor Coll. Medicine, Texas Medical Center, 1200 Moursund Ave., Houston, TX, 77030

Compr Ther; 7(12):45-51 1981

The pathobiology, diagnosis, and treatment of pancreatic cancer are discussed. Incidence of pancreatic cancer has been steadily increasing. Two syndromes are associated with pancreatic carcinoma. Carcinoma of the head of the pancreas is characterized by the development of obstructive jaundice as the tumor occludes or invades the intrapancreatic portion of the common bile duct. Carcinoma of the body and tail of the pancreas is characterized by abdominal pain and wt loss. Percutaneous transhepatic cholangiography, endoscopic retrograde cholangiopancreatography, sonography, and computerized axial tomography have improved the diagnostic accuracy in pancreatic cancer. Treatment includes chemotherapy, alone or in combination with radiation, and surgical excision. Only patients who are candidates for surgery can expect prolonged survival. Surgical preparation and prognosis are discussed. (15 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

19. CONCOMITANT HEPATIC RADIATION AND INTRAARTERIAL FLUORINATED PYRIMIDINE THERAPY: CORRELATION OF LIVER SCAN, LIVER FUNCTION TESTS, AND PLASMA CEA WITH TUMOR RESPONSE.

Lokich J, Kinsella T, Perri J, Malcolm A, Clouse M
Dept. Medicine, New England Deaconess Hosp., 185 Pilgrim Road, Boston, MA, 02215
Cancer; 48(12):2569-2574 1981

Sixteen patients with metastatic disease to the liver (12 colorectal and 4 unknown primary tumors) were treated in a pilot study of hepatic irradiation (2,500-3,000 rads in 10-12 fractions) delivered concomitantly with continuous short-term intraarterial infusion of 5-fluorouracil (1 g/d) or FUDR (0.5 mg/kg/d) via a percutaneously placed hepatic artery catheter. Abnormal liver function tests, including SGOT, LDH, and alkaline phosphatase, decreased in all patients by day 7-10 of treatment, and other metabolic factors, including serum cholesterol, calcium, albumin, phosphorous, and uric acid, also decreased, often to subnormal levels by termination of treatment (day 15-20). These chemical alterations did not correlate with tumor response in that the identical pattern was observed in responders (10 patients) as well as nonresponders (6 patients). Objective determinants of response were assessed by serial monitoring of plasma carcinoembryonic antigen (CEA) and liver scan. In 14 patients with elevated CEA levels, tumor response (9 patients), nonresponse (4 patients), and relapse (5 patients) was predicted and confirmed by sequential monitoring of CEA. In one patient, a paradoxical decrease in plasma CEA was associated with progressive disease. The liver scan identified all responding patients but was difficult to quantitate and was delayed for months following subjective clinical response and changes in plasma CEA levels. (Author abstract) (17 Refs)

20. CLINICAL CLASSIFICATION OF HEPATOMA IN JAPAN ACCORDING TO SERIAL CHANGES IN SERUM ALPHA-FETOPROTEIN LEVELS.

Matsumoto Y, Suzuki T, Asada I, Ozawa K, Tobe T, Honjo I
Dept. Surgery, Kohka Medical Center, Minakuchi, Shiga, 528, Japan
Cancer; 49(2):354-360 1982

Quantitative determinations of serum alpha-fetoprotein (AFP) in 96 patients with hepatomas have demonstrated three main groups based on changes in the serial levels: (1) patients with more than 10,000 ng/ml or more in a wk (Group A); (2) patients with levels varying from 200 to 10,000 ng/ml and with an increase of 1,000 ng/ml in 3 to 4 mo (Group B); and (3) patients with serum aFP levels below 200 ng/ml during most of their clinical course (Group C). The patients in Group A had a mean survival time of 7.62 +-3.97 mo, and those in Group B, 16.18 +-12.18 mo. The patients in Group C were subdivided into two groups according to whether survival time was long (33.92 +-28.22 mo) or short (3.75 +-0.87 mo). Histologic findings revealed poorly differentiated carcinoma in patients in Group A, moderately differentiated carcinoma in those in Group B, and well differentiated carcinoma in those with long survival in Group C and anaplastic carcinoma in those with short survival in Group C. (Author abstract) (15 Refs)

21. ELECTROPHORETIC SEPARATION OF ALKALINE PHOSPHATASE ISOENZYMES COMPARED WITH ALKALINE PHOSPHATASE AND GAMMA-GLUTAMYLTRANSFERASE IN HEPATOBILIARY DISEASES.

Sorensen S, Matzen P, Bogh I
Dept. Clinical Chemistry, Glostrup Hosp., Univ. Copenhagen, DK-2600 Glostrup, Denmark
Scand J Gastroenterol; 16(7):885-889 1981

The usefulness of three tests, electrophoretic separation of alkaline phosphatase (AP) isoenzymes compared with serum AP and serum gamma-glutamyltransferase in distinguishing between parenchymatous hepatic disease and occlusive hepatobiliary disease was determined in 82 consecutive patients with suspected hepatobiliary disease. Sera from 116 healthy subjects were analyzed by electrophoresis to determine prevalence of the abnormal liver AP band in normal subjects. Among patients studied were four each with carcinomas of the bile duct and pancreas. Detailed analyses in different disease groups led to the conclusion that measurement of serum AP should be preferred to electrophoretic separation of AP and measurement of gamma-glutamyltransferase in distinguishing between parenchymatous liver disease and occlusive hepatobiliary disease. (22 Refs)

22. PERCUTANEOUS TRANSHEPATIC PORTAL VEIN CATHETERIZATION IN THE DIAGNOSIS OF HORMONE-PRODUCING TUMORS IN THE SPLANCHNIC AREA.

Luska G, Zick R, Otten G, Mitzkat HJ
Zentrum Radiologie, Arbeitsbereich Krankenhaus Oststadt, Podbielskistrasse 380, D-3000 Hannover 51, W. Germany
ROEFO; 135(5):566-571 1981

During 1980, percutaneous transhepatic portal vein catheterization was carried out in eight patients with suspected hormone-producing tumors in an attempt to localize these. Seven patients with hyperinsulinism were suspected of having an insulinoma and one a gastrinoma. There were no complications following the catheterization, and difficulties were reduced by the use of a special catheter. The blood samples were examined by radio-immunological methods for insulin or gastrin. On the basis of localized rise in hormone level, it was possible to diagnose three insulinomas and one gastrinoma in the pancreas. The beta-cell tumors were removed by enucleation or segmental resection, the gastrinoma by a Whipple's operation. Three patients showed an insulin gradient and sub-total pancreatectomies were performed. In one patient there was no definite abnormality in the insulin level and an operation has so far not been performed. Our experience indicates that this technique is difficult, but is nevertheless a reliable method for localizing hormone-producing tumors and surgery should not be carried out without it. (Author abstract) (31 Refs) (In GER)

23. A MULTIHORMONAL TUMOR OF THE PANCREAS PRODUCING NEUROTENSIN.

Feurle GE, Helmstaedter V, Tischbirek K, Carraway R, Forssmann WG, Grube D, Roher HD
Medizinische Poliklinik, Univ. Heidelberg, Hospitalstrasse 3, 6900 Heidelberg, W. Germany
Dig Dis Sci; 26(12):1125-1133 1981

In a pancreatic adenoma approximately 78.7% of the endocrine cells reacted specifically with antisera to neurotensin, 17.5% to gastrin, 2.8% to pancreatic polypeptide, and 1% to glucagon. The electron microscope revealed that the majority of the endocrine cells were N-cells -- morphologically similar to the ileal N-cells which are known to represent the neurotensin-producing cells. Neurotensin was extracted from the tumor and identified by Sephadex, ion-exchange, and high-pressure liquid chromatography. Gastrin, pancreatic polypeptide, and glucagon cells were also identified by the electron microscope; the peptides were extracted and demonstrated by chromatography. The serum concentrations of these hormones were elevated. After total gastrectomy which was necessary because of Zollinger-Ellison syndrome, a jejunoesophageal alkaline reflux, reaching the upper esophagus appeared. As intravenous infusion of synthetic neurotensin in rats caused an increase of luminal enteric pressure, it is suggested that severe jejunoesophageal reflux after gastrectomy may be a clinical feature of a neurotensinoma. (Author abstract) (24 Refs)

24. DISTRIBUTION OF PROSTAGLANDINS B, E AND F SERIES IN PLASMA OF CANCER PATIENTS.

Harvey PR, Kimura LH, Cripps C, Hokama Y
Univ. Toronto, Toronto, Canada
J Med; 12(6):427-432 1981

Plasma prostaglandins (PGs) of normal individuals and cancer patients have been examined. With the exception of a breast carcinoma patient, all patients demonstrated significant elevations in PGE levels. Lung cancer patients showed a significant decrease in PGF, while stomach cancer patients showed a marked decrease in PGB. It is suggested that the changes in PGs may play a significant role in host-tumor metabolism. (Author abstract) (8 Refs)

25. PURIFICATION AND PARTIAL CHARACTERIZATION OF A 17BETA-ESTRADIOL-BINDING MACROMOLECULE IN THE HUMAN PANCREAS.

Pousette A, Carlstrom K, Skoldefors H, Wilking N, Theve NO
Dept. Medical Nutrition and Clinical Chemistry, Karolinska Institutet, Stockholm, Sweden
Cancer Res; 42(2):633-737 1982

Studies have been performed in order to investigate the presence of estrogen-binding proteins in the human pancreas that may provide the biochemical basis for tissue-specific treatment of pancreatic carcinoma with estrogen-based cytotoxic drugs. Using in vitro techniques, an estrogen-binding macromolecule has been purified from human pancreatic cytosol. With estradiol as ligand, Kd was calculated to be 1.7 x 10(-7) M, and this protein was found to constitute about 4% of the total protein content in the cytosol. No metabolism of estradiol was detected under the in vitro conditions used. Competition experiments indicated that, besides estradiol, the protein also had some affinity for estrone and estriol but not for testosterone, progesterone, or dexamethasone. The protein was purified to homogeneity using chromatography on concanavalin A and hydroxylapatite followed by preparative polyacrylamide gel electrophoresis. The purified protein, still able to bind [3H]estradiol, gave one single protein-staining band when analyzed using different electrophoretic systems. The steroid:protein complex did not bind to phosphocellulose or DNA-cellulose and did not show any similarities to steroid receptor proteins. The complex has a Stokes' radius of 52 A and a sedimentation coefficient of 3S. The biological significance of the macromolecule is unknown, but the protein is probably synthesized in the pancreas since no similar protein could be detected in serum. Studies are now being carried out to investigate whether this novel protein in the human pancreas may interact with complexes between cytotoxic agents and estrogens and provide the basis for tissue-specific treatment of pancreatic carcinoma. (Author abstract) (18 Refs)

26. TOTAL SERUM BILE ACIDS IN LIVER DISEASE.

Sadaruddin A, Uberi J

PMRC Res. Cedntre, Jinnah Postgraduate Medical Center, Karachi, Pakistan

J Pak Med Assoc; 31(4):82-84 1981

The diagnostic usefulness of total serum bile acid levels in acute and chronic hepatic disorders was evaluated in 44 patients. Postprandial blood samples were collected from 15 patients with hepatitis, 15 with cirrhosis, and 14 with liver cancer. Mean values and range of total serum bile acid levels were higher in all patient groups than in controls, with values highest for cirrhosis, lowest in cancer, and intermediate in hepatitis. Normal glutamate pyruvate levels were observed in 85.7% of cancer patients, while 21.4%, 7.2%, and 35.7% of patients had normal glutamate oxalacetate, alkaline phosphatase, and bilirubin, respectively. No correlation was observed between total serum bile acid and the conventional liver function tests. (16 Refs)

27. SERUM ZINC LEVEL IN MALIGNANCY OF G.I.T. AND LIVER.

Mathur D, Nawalkha PL, Bhargava SC, Mathur RL, Mathur GS, Agarwal VK

Dept. Radiology, S. M. S. Medical Coll., Jaipur, India

Indian J Radiol; 35(4):293-298 1981

Serum zinc levels were determined in 25 healthy controls, 23 patients with with gastrointestinal-tract (GIT) malignancies, and 8 patients with metastatic liver carcinoma, 2 of whom had primary GIT cancers. Mean zinc levels in controls, GIT-cancer patients, and patients with metastases were 88.08, 67.04, and 61.75 ug/100 ml, respectively; the difference between mean zinc level in controls and that in GIT-cancer patients was significant (p less than 0.001). Reduction in serum zinc level depended upon severity of disease and involvement of the liver. As the disease advances, serum zinc level falls. (15 Refs)

28. CAN ACUTE PHASE REACTANTS DISTINGUISH BENIGN AND MALIGNANT DISEASE OF THE UPPER GUT?

Grindulis KA, Forster PJ, Hubball S, McConkey B

Dudley Road Hosp., Dudley Road, Birmingham, B18 7QH, England

Clin Oncol; 7(4):345-350 1981

Four 'acute phase reactants' (C-reactive protein, alpha-I-antitrypsin, haptoglobin, and orosomucoid) were measured in 107 patients undergoing upper gastro-intestinal endoscopy. There was a significant increase (p less than 0.05; Mann-Whitney U test) in the concentrations of all four proteins in patients with carcinoma when compared to those with normal findings or scarring of stomach or duodenum. Though the patients with malignancy also had higher mean acute phase reactant concentrations than those with peptic ulcer and non-malignant inflammation, the difference did not reach statistical significance. Despite these differences, the scatter of concentrations reduced the value of acute phase reactants as discriminators of benign and malignant disease in the individual case. Recurrence of raised concentrations after reduction with treatment would suggest an increase in residual tumor mass and the use of these proteins to indicate recurrent malignancy warrants further study. (Author abstract) (9 Refs)

29. A CONTROLLED STUDY OF HEPATITIS CORE ANTIBODY (HBCAB) IN PRIMARY HEPATOCELLULAR CARCINOMA AND LIVER CIRRHOSIS IN KENYA.

Bowry TR, Shah MV, Ahmad Z
Immunology Section, Dept. Human Pathology, Univ. Nairobi, Nairobi, Kenya
East Afr Med J; 58(8):576-582 1981

Incidence of hepatitis B virus (HBV) markers was studied in 75 Kenyan patients with confirmed liver disease. Among these patients, 15 had liver cirrhosis (LC), 13 had LC and concomitant primary hepatocellular carcinoma (PHC), and 47 had PHC. Presence of hepatitis B surface antigen (HBsAg) was detected in 40% of the patients with LC, in 47% of the patients with LC + PHC, and in 46% of the patients with PHC. Among the HBsAg-positive patients, high titers of hepatitis B core antibody (HBcAb) were detected in 100% of the patients with LC, 100% of those with LC + PHC, and 90% of those with PHC. HBcAb as a sole marker of HBV was detected in 13% of the patients with LC, 31% of those with LC + PHC, and 9% of those with PHC. (16 Refs)

30. PURIFICATION OF A HUMAN PANCREAS-SPECIFIC ANTIGEN.

Papsidero LD, Abeyounis CJ, Milgrom F, Van Dusen L, Shimano T, Chu TM
(c/o Milgrom) Dept. Microbiology, Sch. Medicine, State Univ. New York at Buffalo, Buffalo, NY, 14214
Int Arch Allergy Appl Immunol; 66(3):267-273 1981

Using an antibody reagent, an organ-specific antigen has been purified from human pancreas. Purification was achieved using ammonium sulfate and ethanol precipitations, concanavalin A-Sepharose affinity chromatography, anion-exchange chromatography and gel filtration. The antigen had a mol wt of approximately 68,000 as determined by gel filtration, was not dissociated into subunits by sodium dodecyl sulfate, and did not bind to immobilized concanavalin A. The biological significance of this antigen in pancreatic cancer is being studied. (Author abstract) (14 Refs)

31. EVALUATION OF A HUMAN PANCREAS-SPECIFIC ANTIGEN BY ENZYME-LINKED IMMUNOSORBENT ASSAY.

Loor R, Kuriyama M, Manzo ML, Inaji H, Douglass HO, Berjian R, Nicolai JJ, Tytgat GN, Chu TM
Dept. Diagnostic Immunology Research and Biochemistry, Roswell Park Memorial Inst., Buffalo, NY, 14263
Clin Chim Acta; 117(3):251-258 1981

A sensitive sandwich-type enzyme immunosorbent assay has been developed for quantitation of a new human pancreas-specific antigen (PaA). Enzyme-linked immunosorbent assay (ELISA) for PaA employs anti-PaA IgG with poly-L-lysine-coated polystyrene tubes as the solid-phase support. Serum PaA binds to the solid-phase and reacts further with peroxidase conjugated anti PaA IgG, in which the peroxidase can be accurately quantitated and serves as an index of PaA concentration. With this method PaA concentration at 0.8 nano (n)g/ml can be detected. Serum PaA levels from 51 healthy persons ranged from 4-34 ng/ml. Using 21.5 ng/ml (upper 97.5 percentile of normal controls) as upper limit, 42/60 patients with pancreatic cancer, 3/14 with pancreatitis, and 2/6 with cholelithiasis had an elevated PaA. Very few patients with other cancers were shown to have an elevated PaA; 3/40 with lung cancer, 2/43 with colorectal cancer, 3/40 with prostate cancer, and 1/39 with breast cancer. The calculated sensitivity of the serum PaA test for the detection of pancreatic cancer was 70%. Specificity of the PaA test was 95%. Combination of the PaA test with other serologic tests may provide additional modalities for diagnosis of pancreatic cancer. (21 Refs)

32. ANTIGENS OF HUMAN PANCREATIC ADENOCARCINOMA CELLS DEFINED BY MURINE MONOCLONAL A NTIBODIES.

Metzgar RS, Gaillard MT, Levine SJ, Tuck FL, Bossen EH, Borowitz MJ
Dept. Microbiology and Immunology, Duke Univ. Medical Center, Durham, NC, 27710
Cancer Res; 42(2):601-608 1982

We have elicited and characterized the serological specificity of five murine monoclonal antibodies (DU-PAN-1, 2, 3, 4, and 5) to a human pancreatic tumor cell line, HPAF. The antibodies are not detecting HLA-associated antigens since all of the monoclonals failed to react with human lymphoid and myeloid cell lines and uncultured cells. All of the monoclonals except DU-PAN-5 reacted with four of five pancreatic tumor cell lines and two of two uncultured pancreatic tumors. An immunoperoxidase technique was used to determine the presence of the antigens detected by the monoclonal antibodies in frozen sections of tumor and adult and fetal normal tissues. DU-PAN-1 antigen was detected on pancreatic tumors, and a transitional cell carcinoma of the bladder, but was detected on no other adult or fetal normal tissues including pancreas. One of the antigens (DU-PAN-2) defined by the monoclonals was present on pancreatic ductal epithelial cells and showed a restricted distribution on tumor cells from some other carcinoma patients and on cells from certain fetal tissues. DU-PAN-3 antigen was present on adult and fetal pancreatic cells and certain tumor cells but could not be detected on cells of other fetal or adult normal tissues. DU-PAN-4 and DU-PAN-5 antigens have a more widespread distribution on normal or tumor cell types. (Author abstract) (9 Refs)

33. CIRCULATING IMMUNE COMPLEX AND IMMUNOLOGIC RESPONSES IN PATIENTS WITH MALIGNANT TUMORS.

Saiga T
First Dept. Surgery, Sch. Medicine, Gifu Univ., Tsukasa-cho, Gifu 500, Japan
Nippon Geka Gakkai Zasshi; 82(6):587-598 1981

One hundred forty-four patients with malignant tumors (gastric cancer, 60 patients; colorectal cancer, 42 patients; lung cancer, 32 patients; and breast cancer, 10 patients) were examined for circulating immune complex (CIC) by C1q solid-phase radioimmunoassay. They were tested for cellular and humoral immunity at the same time and the correlation of the responses with CIC was investigated. Positive CIC was obtained in 16 of the patients (11.1%), a high incidence being noted in patients with advanced cancer. Two of the 13 patients from whom the tumor was not completely removed showed persistent positive CIC postoperatively. The positive rate for delayed skin tests (tuberculin test and phytohemagglutinin response) was higher in patients with positive CIC than in those with negative CIC. No significant difference was observed in the T cell and B cell content between the positive CIC group and the negative CIC group, before or after surgery. Blast formation of lymphocytes showed a tendency to be lower in the positive CIC group than in t he negative CIC group, before or after surgery. However, no significant difference was noted. No significant difference was observed in the CH50, C3 and C4 complement systems between the positive and negative CIC groups before surgery.

After the operation, the positive CIC group had significantly higher C4 levels than the negative CIC group. No significant difference was observed in serum glycoproteins (alpha1-acid glycoprotein, alpha1-antitrypsin and haptoglobin) between the positive CIC group and the negative group, before or after surgery. Although CIC caused no significant differences in cellular immunity or humoral immunity, it is considered to be a factor which has some influence on them. (48 Refs) (In JPN)

34. A STUDY OF CELL-MEDIATED IMMUNITY TO GASTROINTESTINAL CANCER.

Yagawa H, Ogawa K, Mikami N, Ohtani Y, Sakakibara N
Inst. Gastroenterology, Tokyo Women's Medical Coll., 10 Kawada-cho, Shinjuku-ku, Tokyo, Japan
Cell Mol Biol; 27(2/3):119-131 1981

The following results were obtained from our study on cell-mediated immunity of gastrointestinal cancer: (1) The PPD and PHA skin test, the percentage and absolute number of peripheral T lymphocytes and blastogenesis rate of peripheral lymphocytes by PHA in cancer cases were obviously lower than those in gastroduodenal ulcer cases and healthy adults. (2) The PPD skin test, the percentage of peripheral T lymphocytes and the blastogenesis rate of peripheral lymphocytes by PHA in gastric cancer cases decrease as the clinical stage advances. These results have brought us the fact that to know the preoperative patient's immunity to the carcinoma can be one of the criteria to find out its stage and the operation method. (Author abstract) (11 Refs)

SURGICAL AND RADIATION THERAPY

35. DIAGNOSIS AND TREATMENT OF EARLY STOMACH CARCINOMA.

Mennicken C, Linder MM, Manegold BC, Trede M, Maruyama M
Surgical Clinic, Heidelberg Univ., Mannheim Clinic, Mannheim, W. Germany
Excerpta Med Int Congr Ser; 555:242-248,418 1981

Of 1,025 patients operated on for stomach cancer between 1970 and 1980, 104 patients (68 men, 36 women, 33-84 yr old) had early gastric cancer (EGC). Five patients had no symptoms, while 96 reported symptoms consisting of epigastric pressure pain, wt loss, nausea and vomiting, anorexia, fasting pains, hematemesis/melena, feeling of fullness, and postprandial pain. The interval between the first symptoms and diagnosis was greater than 3 mo in 33% of the patients. It is recommended that every patient with stomach pain who is over 40 yr old or is any way at risk should be followed up carefully, and if necessary, reexamined by endoscopy. Two-thirds of EGC occurred in the prepyloric antrum, and only a few in the proximal half of the stomach. Ulcerous lesions predominated over polyp forms. There was 72 Billroth II resections, 16 total gastrectomies, and 5 Billroth I resections. Two patients underwent local excision only. There were nine instances of severe complications. Four patients died postoperatively while still in the hospital. The simple 5-yr survival rate was 72%. When operative mortality and age correction were eliminated, the 5-yr survival rate increased to 84.5%; when all other causes of death were eliminated, this figure increased to 90%. Compared to advanced gastric cancer, there is a very high probability of 5-yr survival in EGC. (10 Refs)

36. RESULTS OF SURGICAL MANAGEMENT IN 92 CONSECUTIVE PATIENTS WITH ZOLLINGER-ELLISON SYNDROME.

Bonfils S, Landor JH, Mignon M, Hervoir P
Unite de Recherches de Gastroenterologie (U.10), Hopital Bichat, 170 Boulevard Ney, 75877 Paris Cedex 18, France
Ann Surg; 194(6):692-697 1981

Hospital records and follow-up information on 92 patients with surgically proven Zollinger-Ellison syndrome have been reviewed, and data relating to symptomatology, age and sex incidence, pathologic findings, and early and late results of surgical procedures have been summarized. The postoperative mortality rate was 15%, and was adversely affected by previous peptic ulcer surgery, by the necessity of urgent operation for complications of peptic ulcer, and by employment of a procedure that failed to control acid secretion. Thirteen patients were found to have primary gastrinomas of the duodenum and an additional 13 patients had islet cell hyperplasia without evidence of frank neoplasm; prognosis in these two groups appears to be particularly favorable. Despite the current availability of effective nonoperative measures for control of gastric hypersecretion, surgical exploration is warranted in all patients to determine location and extent of tumor and to attempt to control the ulcer diathesis by resection of tumor. Long-term therapy with H2 receptor antagonists is advised for patients whose hypersecretory state has not been alleviated by tumor resection or whose gastrinoma cannot be removed. Total gastrectomy is still indicated in patients whose tumors are not amenable to resection and who are resistant to, or cannot follow, a rigid medical regimen. (Author abstract) (20 Refs)

37. COMPLICATIONS OF BILIARY TRACT SURGERY.

Thorbjarnarson B
New York Hosp., Cornell Univ. Medical Center, New York, NY
Major Probl Clin Surg; 16:236-254 1982

Complications of biliary tract surgery are discussed, including subhepatic accumulations and abscesses, bile peritonitis, biliary fistulas, hemorrhage, complications associated with the use of drainage tubes, (obstruction caused by occluded tubes and retention or dislocation of drainage tubes), jaundice, and infection. Calculi, strictures, and malignant tumors are the most common causes of jaundice following biliary tract operations. Because the combination of common duct stones and an acalculous gallbladder is rare, the development of jaundice after removal of an acalculous gallbladder is suggestive of malignancy. The diagnosis of biliary tract malignancy is discussed. Pancreatitis from biliary tract disease may mimic carcinoma; biopsy is necessary for conclusive diagnosis. Ampullary carcinoma can often be detected by transduodenal exploration. Other causes of jaundice following biliary tract surgery are pancreatitis, cholangitis, chronic liver disease, incompatible transfusions, viral hepatitis, and metastatic carcinoma. Antibiotic treatment of infections occurring after biliary tract surgery is discussed. (14 Refs)

38. RECENT ADVANCES OF GASTROENTEROLOGICAL LASER ENDOSCOPY IN JAPAN.

Oguro Y, Hirashima T, Tytgat GN
Dept. Internal Medicine, Natl. Cancer Center Hosp., Tokyo, Japan
Excerpta Med Int Congr Ser; 555:194-198,411 1981

Recent advances of laser endoscopy are reviewed with particular emphasis on gastroenterology. Thirty-seven laser facilities were used for gastroenterological endoscopy. Twenty-five

Nd-YAG lasers were reported, including 11 MBB models, 7 Molectron models, 6 NEC of Japan models, and 1 ALM model from France. Nine argon lasers were reported. Of the quartz fibers used, the open gas jet fiber of MBB was the most common, followed by Olympus and Molectron. Experimental studies of laser irradiation included the treatment and diagnosis of experimentally-induced gastric cancer. Laser irradiation was effective in 85.2% of 149 case of gastric bleeding. Laser therapy was effective in 85.6% of cases of bleeding from the esophagus, duodenum, colon, and stomach. In treatment of benign tumors, laser irradiation was effective in 29/91 gastric polyps, 6/6 gastric adenomas, 1/2 submucosal tumors of the stomach, 1/1 leiomyoma of the esophagus, and 6/30 of colonic polyps. For treatment of malignant tumors, laser irradiation as palliative therapy was effective in 2/5 esophageal cancers and 10/40 gastric cancers. As radical therapy for malignant tumors, laser irradiation was effective in 0/2 esophageal cancers, 22/31 early gastric cancers, 0/1 advanced gastric cancers, and 2/3 colon cancers. Laser irradiation was applied to fluorescent diagnosis of carcinoma in 54 cases, to biopsy a submucosal tumor in 1 case, and to diagnose deep invasion of cancer with infrared laser in 1 case. (no Refs)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

39. ADJUVANT 5-FLUOROURACIL AND BCNU CHEMOTHERAPY IN GASTRIC CANCER: 3-YEAR RESULTS.

Schlag P, Schreml W, Gaus W, Herfarth C, Linder MM, Queisser W, Trede M
Abteilung fur Allgemeine Chirurgie, Universitat Ulm, D-7900 Ulm-Safranberg, W. Germany
Recent Results Cancer Res; 80:277-283 1982

One hundred-three patients with a potentially curative operation of a histologic ally proven gastric cancer were randomly assigned to a control and chemotherapy group after stratification according to tumor Stage II and III. Chemotherapy courses with 5-fluorouracil (10 mg/kg/day) and BCNU (40 mg/m2/day) for 5 days were administered eight times in 6-8 wk intervals. Age, sex, and tumor location were matched in the chemotherapy and control groups. Five patients declined treatment after randomization. Three yr after initiating the study, the tumor has recurred in 38 of the 103 patients. There were 21 recurrences of 54 controls and 14 recurrences of 44 patients who received chemotherapy, and 17 and 10 deaths, respectively, due to tumor relapse. The results of our study to date show a high degree of statistical probability that adjuvant chemotherapy with the regime used has no influence on the recurrence-free interval and survival time in gastric cancer. (Author abstract) (15 Refs)

40. CHEMOTHERAPY OF CARCINOMAS OF THE DIGESTIVE TRACT.

Gisselbrecht C, Belpomme D, Mignot L, Marty M, Mathe G, Boiron M
Unite d'oncologie Clinique, Hopital Saint-Louis, 2 Place du Docteur Fournier, F-75475 Paris Cedex, France
Recent Results Cancer Res; 80:296-302 1982

Adjuvant chemotherapy trials in gastric and colorectal carcinomas are reviewed and no clear benefit from such treatment could be observed. To improve existing chemotherapy regimens, several pilot studies were performed in 95 gastric cancer and 85 colorectal carcinoma patients. Response rate for gastric carcinomas using the mitomycin C plus adriamycin plus 5-fluorouracil (5-FU) (FAM) regimen was 40% and was not improved by the addition of nitrosoureas. In colorectal carcinomas none of the combinations used gave better results than 5-FU alone. Fourteen patients with esophageal carcinoma were treated with combination CDDP and the response rate was as high as 50%. (Author abstract) (14 Refs)

41. INTERMITTENT HEPATIC ARTERY OCCLUSION FOR NONRESECTABLE LIVER CANCER.

Hisano S, Nakagawa M, Tarumi T, Morimoto T, Ida T, Nakase A
First Dept. Surgery, Shimane Medical Univ., Enya, Izumo, Shimane 693, Japan
Nippon Gan Chiryo Gakkai Shi; 16(4):664-672 1981

Hepatic artery occlusion and intermittent ia chemotherapy were performed in two patients (59-yr-old man with primary hepatic cancer and 53-yr-old man with hepatic metastasis). A Gruntzig dilation catheter was placed in the hepatic artery or in the right or left branches of the hepatic artery after resectability of the hepatic tumor was deemed to be impossible during laparotomy; prior to insertion of the catheter, hepatic angiography was performed to ascertain the presence or absence of tumors or emboli blocking the hepatic vessels. Following insertion of the catheter, angiography was performed again in order to determine the best placement of the catheter with respect to vessels controlling the entire region of the tum or nest. The end of the artery containing the catheter was left outside the peritoneum when possible, and heparin was administered with iv drip infusion in the catheter to prevent the inside catheter coagulation. Temporary hepatic arterial occlusion was performed 15-60 min/day. 5-fluorouracil (250 mg/day) was administered, and mitomycin C (6 mg) was infused 2x/wk. With the aid of computed tomography and/or of scintigraphy performed 6 mo postoperatively, marked regression of the primary hepatic cancer and necrosis of the center of the metastatic hepatic tumor were observed. This method was thought to be effective for nonresectable hepatic cancer and safer than permanent hepatic artery ligation. (15 Refs) (In JPN)

SELECTED CLINICAL CORRELATIONS

42. KLATSKIN TUMOR: RADIOLOGIC FEATURES OF BILIARY TRACT DISEASE.

Dinan C, Lipford EH, Simeone JF, Mueller PR, Cronan JJ
Dept. Medicine, Johns Hopkins Hosp., Baltimore, MD
Johns Hopkins Med J; 149(6):228-233 1982

A 65-yr-old male with Klatskin tumor was admitted for evaluation of diarrhea and dark urine. The patient was jaundiced and had a palpable liver. Liver function test parameters were elevated, with total bilirubin 11.5 mg/deciliter, alkaline phosphatase 151 IU/liter, SGOT 83 IU/liter, and SGPT 108 IU/liter. After the first day of a 3-day course of therapy with tobramycin and clindamycin, a transhepatic cholangiogram and percutaneous biliary drainage study demonstrated obstruction at the junction of the left and right intrahepatic ducts and at the junction of several smaller ducts; the common hepatic duct was also involved. A ring catheter was placed around the obstruction and a temporary catheter in the right posterior duct. Later a cholangiogram indicated a block of the left hepatic duct and the system was converted to internal drainage. The patient was discharged and readmitted in 2 days with hypotension and fever; he died several days later. Autopsy revealed a 3 x 1 x 1 cm tumor in the region of the hepatic bifurcation. The presence or absence of biliary tract obstructions, etiology of such obstructions, anatomy of the obstructed region, and choice of therapy are discussed. Relief of obstruction may be obtained either by using catheters or by surgical techniques. (6 Refs)

43. RADIOGRAPHIC AND ENDOSCOPIC ASPECTS OF EARLY MALIGNANT LYMPHOMA OF THE STOMACH, WITH SPECIAL REFERENCE TO ITS DIFFERENTIAL DIAGNOSIS FROM EARLY GASTRIC CANCER.

Ninomiya T, Baba M, Maruyama M, Kimmig JM
Dept. Internal Medicine, Cancer Inst. Hosp., Tokyo, Japan
Excerpta Med Int Congr Ser; 555:262-267,421 1981

The radiographic and endoscopic diagnosis of early malignant lymphoma (ML) is discussed with particular attention paid to differential diagnosis from early gastric cancer (EGC). Eighty-four lesions from 59 cases were reviewed, including 64 (44 cases) of advanced ML, and 19 (15 cases) of early ML. There was no marked difference in the age distribution between ML and EGC, both ranging from 20-70 yr, with a mean of 56.4 yr. Male:female ratio was 2:1. The most frequent site of ML of the stomach was the lesser curvature of the lower third, followed by the posterior wall of the upper third. Twenty-five percent of early ML were Borrmann Type 2, 64% Borrmann Type 3, and 11% Borrmann Type 4. Most cases of early ML were Type IIc. Only 22% of all ML were diagnosed correctly by radiography. Seven of the cases of early ML were diagnosed correctly, while seven were diagnosed as cancer. The double contrast radiographic method is the diagnostic method of choice for ML. Multiple irregular depressions with surrounding raised mucosa are characteristic of early ML. Radiographic and endoscopic diagnosis was difficult in the IIa + IIc Type ML, although endoscopy might be more beneficial than radiography. Early ML must be differentiated from benign lymphoid hyperplasia (reactive lymphoreticular hyperplasia). Biopsy fragments should be taken from the inner aspect of the surrounding raised mucosa for the most accurate diagnosis. Since biopsy is not always reliable for diagnosis of ML, detailed analysis of radiographic and endoscopic findings is necessary. (3 Refs)

44. HEPATIC RESECTION OF METASTATIC COLORECTAL CARCINOMA. A TEN-YEAR EXPERIENCE.

Logan SE, Meier SJ, Ramming KP, Morton DL, Longmire WP
(c/o Ramming), Univ. California, 54-140 CHS, Los Angeles, CA, 90024
Arch Surg; 117(1):25-28 1982

Nineteen patients have undergone partial hepatectomy for metastatic colorectal carcinoma at UCLA during the past 10 yr, including 5 trisegmentectomies (TS), 8 lobectomies (L), and 6 segmentectomies (SG), with only 1 (5.3%) mortality. Twelve lesions were solitary (S) and 7 multiple (M). Mean survival is 27.4 mo, with three patients surviving over 5 yr and one nearly 8 yr. Better mean survival exists for S (33.2 mo) compared with M (15.8 mo) lesions; for lesser resections: SG (44.7 mo), compared with L (24.3 mo) and TS (11.0 mo); and for those with delayed appearance of hepatic metastases: beyond 2 yr (40.5 mo), less than 1 yr (24.8 mo), and synchronous (23.1 mo). Survival figures should improve, as none of the 12 surviving patients have evidence of recurrent disease and many have short follow-up. This experience defends aggressive surgical treatment of resectable colorectal carcinoma metastatic to liver, because systemic therapy is markedly less effective. (Author abstract) (28 Refs)

45. INCIDENCE OF HEPATIC METASTASES OF MALIGNANT TUMORS AS A FUNCTION OF AGE AND SEX.

Pejchl S, Pejchlova J, Chaloupka F
Vnitrni klinika fakulty detskeho lerarstvi, Karlova Universita, Vlasska 36, 118 33 Prague 1, Czechoslovakia
Vnitr Lek; 27(11):1073-1077 1981

The possible relationship between the age and sex of the patients, on one hand, and the incidence of hepatic metastases of malignant tumors, on the other hand, was studied in 2,270 primary malignant tumors confirmed at autopsy in 2,203 patients (av age at death 67.2 yr). Eleven hundred and sixty-six tumors were found in men and 1,104 in women. Carcinomas accounted for 94% of all tumors. Seven hundred and eighty-five hepatic metastases were found. The incidence of hepatic metastases was 146/437 colorectal tumors, 144/453 gastric tumors, 123/321 tracheal tumors, 107/208 tumors of the gallbladder and bile ducts, 84/142 pancreatic tumors, 55/142 breast tumors, 26/118 ovarian and uterine tumors, 11/102 prostatic tumors, 25/107 renal tumors, and 84/249 miscellaneous tumors. At an overall metastasis frequency of 34.6%, the corresponding frequencies of hepatic metastases were 43.2% for patients 16-40 yr old, 38% for 41-50 yr old, 40.2% for 51-60 yr old, 35% for 61-70 yr old, 31.8% for 71-80 yr old, and 29.4% for patients greater than 80 yr old. Significant decrease ($p = 0.025$) in the overall incidence of hepatic metastases with advancing age was found. This decrease was manifest for all primary tumor locations except for tumors of the stomach and pancreas. There was no statistically significant difference in the incidence of hepatic metastases between men and women. (12 Refs) (In CZE)

REHABILITATION ASPECTS

46. TOTAL PARENTERAL NUTRITION IN DISEASES OF THE PANCREAS.

Mazzeo F, Gaeta L, Mozzillo N, Piccolboni D
Cattedra di Semeiotica Chirurgica, Facolta di Medicina e Chirurgia - Universita di Napoli, Napoli, Italy
Minerva Dietol Gastroenterol; 27(4):611-618 1981

Total parenteral nutrition (TPN) in pancreatic diseases is presented. TPN reduced morbidity, complications, and mortality in cancer and chronic pancreatitis patients. In 25 pancreatic cancer patients, the most common location of disease was the pancreatic head (16). TPN was administered systematically to cancer patients due to their poor condition and difficulty with proper alimentation (pain). In the TPN group, mortality was 17.9% compared with 25% in a non-TPN treated group. (18 Refs) (In ITA)

47. TECHNIQUE FOR ENDOSCOPIC INTUBATION OF GASTRIC CANCER.

den Hartog Jager FC, Berkel J, Tytgat GN, Cremer M
Div. Gastroenterology, Univ. Amsterdam, Wilhelmina Gasthuis, Amsterdam, The Netherlands
Excerpta Med Int Congr Ser; 555:86-95,393 1981

One hundred and seventy-six consecutive patients (134 men, 42 women; mean age 69.5 yr, range 39-92 yr) with obstructive gastric malignancies were treated with palliative fiberendoscopic intubation with a transparent plastic prosthesis. The prosthesis was made from polyvinyl tubing (Tygon R 3693) and varied in length from 8-35 cm. The lesion was dilated, local anesthesia and diazepam sedation were administered, and the prosthesis was introduced mounted on a small caliber fiberendoscope. A chest x-ray or plain abdominal film was taken to exclude perforation and to document the position of the prosthesis. In general, good palliation with restoration of the food passage was obtained. Early complications were migration and perforation. Migration within 4 wk occurred in 20 patients because of very soft tumors, too much dilation, and the tumor mass itself. Perforation occurred in 15 patients, causing death in two. Five patients died: two with peritonitis after perforation, two from septic shock, and one from aspiration pneumonia. Late migration occurring after 4 wk in 17 patients was usually solved by changing the tube for one with a shoulder or by using a longer tube. Obstruction occurred due to food impaction (12 patients), due to tumor growth above and below the prosthesis (19), or reflux esophagitis (2). Pressure necrosis occurred in seven patients 23-230 days after intubation. Fistula formation could be prevented by changing the prosthesis for a longer one. Survival from the time of intubation was 0-659 days with a mean of 114 days. Intubation failed in nine patients. (7 Refs)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

48. THE HEPATITIS-B VIRUS AND HEPATOCELLULAR CARCINOMA.

Kew MC
Dept. Medicine, Witwatersrand Univ. Medical Sch., Johannesburg, South Africa
Semin Liver Dis; 1(1):59-67 1981

The association between hepatocellular carcinoma (HCC) and chronic hepatitis-B virus (HBV) is discussed, and various explanations for its etiology are considered. The world-wide geographic distributions of the HBV carrier state and HCC are remarkably similar, with some exceptions. Countries in sub-Saharan Africa and the Far East, eg, with HBV surface antigen carrier rates of 6-14% also have the highest rates of HCC. However, in Greenland, where 7-25% of the population has chronic HBV surface antigen, HCC is nevertheless rare. This discrepancy could be explained by the absence of a cocarcinogen in the Greenland environment. The most persuasive evidence that an association exists between HCC and HBV is the frequency with which markers of the virus are present in the serum and tissues of patients with this tumor. Alternative explanations to a cause and effect relationship between HBV infection and HCC are discussed. However, no such considered explanations account for the association as well as the postulate that HBV plays a causal role in HCC. (84 Refs)

49. VIRUSES SIMILAR TO HEPATITIS B VIRUS (ICRONS).

Blumberg BS
Inst. Cancer Res., Fox Chase Cancer Center, Philadelphia, PA, 19111
Hum Pathol; 12(12):1107-1113 1981

In 1971, on the basis of the unusual clinical and epidemiologic characteristics of hepatitis B virus, we postulated the existence of a class of viruses that we termed icrons. An increased understanding of the molecular biology of hepatitis B virus resulted in the discovery, by Summers and his colleagues, of the woodchuck hepatitis virus. This virus is common in the North American woodchuck (Marmota monax) and is associated with primary cancer of the liver in this animal. Subsequently similar viruses were found in Beechey ground squirrels in California by Marion and her coworkers and domesticated (Pekin) ducks from the United States by Mason and his coworkers. In the latter the virus infects the liver and presumably is associated with disease of this organ. The discovery of additional viruses similar to hepatitis B virus in animals other than man and their association with cancer of the liver encourages the continuing search for other virus-cancer associations for which prevention methods might be effective. (Author abstract) (20 Refs)

50. PRIMARY HEPATOCELLULAR CARCINOMA -- ETIOLOGY, PATHOGENESIS, AND PREVENTION.

London WT
Inst. for Cancer Res., Fox Chase Cancer Center, Philadelphia, PA, 19111
Hum Pathol; 12(12):1085-1097 1981

Worldwide, primary hepatocellular carcinoma may be the most common cancer in men. Usually it occurs in association with cirrhosis or chronic hepatitis. In this article I present evidence that the majority of these cases are associated with, and probably caused by, persistent infection with hepatitis B virus. I also propose a model that describes the role of the hepatitis B virus in the pathogenesis of primary hepatocellular carcinoma. If persistent infection with hepatitis B virus is required for the development of most cases of primary hepatocellular carcinoma, prevention of such infections should prevent most cases of primary hepatocellular carcinoma. A vaccine against hepatitis B virus, prepared from surface antigen particles (HBsAg) harvested from the blood of hepatitis B virus carriers, has been safe and effective in preventing acute infection with hepatitis B virus in adult homosexual men. If it is equally safe and effective in young children, it will be administered widely to populations living in areas endemic for hepatitis B virus infections. Thereafter it may be possible to learn within 5 to 10 years whether the vaccine prevents chronic liver disease. If it does, it will be reasonable to conclude that it will also prevent primary hepatocellular carcinoma. (Author abstract) (47 Refs)

51. PRIMARY CANCER OF THE GASTRIC STUMP: COMMENTS ON 18 CASES.

Abrao A, Possik RA, Cappellano RS, Do Amarante AP
Departamento de Cirurgia Abdominal, Hospital A. C. Camargo, Sao Paulo, Brazil
Rev Paul Med; 97(7/9):116-120 1981

Eighteen patients (52-78 yr old, 15 males and 3 females) with primary cancer of gastric stump (GS) confirmed by histologic examination were studied. Time interval between surgery for gastric ulcer and diagnosis of GS cancer was 11-30 yr. Frequency of GS cancer went from 1 in 1962-1965 to 10 in 1974-1977, while the total number of gastric cancer has not changed to much (365 to 378), probably due to the fact that gastrectomy was performed in larger numbers starting from 1950. Thirteen adenocarcinomas (AC), 3 undifferentiated AC, 1 papilliferous AC and 1 mucinous AC were diagnosed by histopathology. In one case GS tumor was located next to the anastomosis, which had a papilliferous aspect and a histopathologic diagnosis of papilloma. This indicates an intermediary stage in malignant degeneration. Ulcers occured in mucosa on the jejunal and duodenal side of anastomoses. Ulcerated lesions of intestinal mucosa were also of peptic nature. Of the 18 patients 4 were inoperable, 3 had exploratory laparotomy and 11 surgery. Two patients died after surgery, three others 1-15 mo later, 1 was asymptomatic, but committed suicide 6 mo after surgery and 1 patient was living without symptoms 24 mo later. Lymph node involvement (LNI) was seen in 17 patients, and 1 patient without LNI committed suicide. (22 Refs) (In POR)

52. ADENOCARCINOMA IN PERINEAL FISTULAS OF CROHN'S DISEASE.

Chaikhouni A, Regueyra FI, Stevens JR
(c/o Regueyra), 4428 Secor Road, Toledo, OH, 43623
Dis Colon Rectum; 24(8):639-643 1981

Until recently, Crohn's disease has not been regarded as a premalignant lesion, but the increasing number of patients with Crohn's disease in whom adenocarcinoma of the gastrointestinal tract develops strongly suggests that these patients are indeed at a higher risk for carcinoma. These patients are usually young and tend to develop a malignancy in the bypassed ileum or right colon. Patients with such lesions usually have poor prognosis. Adenocarcinoma arising in perineal fistulas secondary to Crohn's disease has not been reported in English medical literature except for one case published in 1975. In this article, the authors report a second, similar case of Crohn's disease with recurrent perineal fistulas. An infiltrating adenocarcinoma developed in these fistulas, in the anorectal region, and in the left labia. The risk of malignancy should be seriously considered in the management of Crohn's disease, especially in young patients. Because of the risk of adenocarcinoma in these patients, resection rather than bypass is recommended in the surgical management. (Author abstract) (14 Refs)

53. CONTRACEPTIVES AND THE LIVER.

Schmid M
Medizinische Klinik, Stadtspital Waid, Tiechestr. 99, CH-8037 Zurich, Switzerland
Leber Magen Darm; 11(5):216-226 1981

Studies on the relationships between the use of oral contraceptives (OC) and hepatic diseases are reviewed. The relationship between the long-term use of OC and benign hepatocellular adenoma is now beyond doubt. The progestagen component of the ovulation inhibitor acts as an enzyme inducer which may facilitate the formation of carcinogenic metabolites from various substances, and prompt elimination of t hese metabolites with the bile is prevented by the cholestatic effect of the estrogens. The relationship between OC and focal nodular hyperplasia is less evident. Here, the congenital hamartomatosis represents a site of least resistance for the hormones, but the steroid hormones are probably responsible for the vascular complications, especially for peliosis. Malignant hepatic tumors (hepatocellular carcinoma and especially hepatoblastoma and angiosarcoma) in connection with the long-term use of OC are extremely rare. The alpha-fetoprotein level is usually not increased significantly in patients with hepatocellular adenoma and carcinoma due to OC. (52 Refs) (In GER)

54. HEPATIC LESIONS CAUSED BY ANABOLIC AND CONTRACEPTIVE STEROIDS.

Ishak KG
Dept. Hepatic Pathology, Armed Forces Inst. Pathology, Washington, DC
Semin Liver Dis; 1(2):116-128 1981

The pathobiology of hepatic lesions induced by long-term use of contraceptive (CS) or anabolic (AS) steroids is described. Lesions attributable to CS and AS may involve any of the systems of the liver, from the bile canaliculi to the hepatocyte to the vessels supplying and draining blood. Oral contraceptives have a number of physiologic effects upon the liver which include decreased bile flow, diminished secretion of organic anions and decreased synthesis and secretion of bile acids. Estrogens and progestins can increase the activity of many enzymes and alter the concentration of many plasma proteins. Subcellular alterations have been reported in humans and rats on AS and women on CS and involve multiple organelles of the several systems of the liver. Both AS and CS have been implicated in intrahepatic cholestasis, and in vascular complications including sinusoidal dilatation, peliosis hepatis, and Budd-Chiari syndrome. AS and CS have been associated with diffuse hyperplasia, nodular transformation, focal nodular hyperplasia, hepatocellular adenoma, hepatocellular carcinoma, and miscellaneous malignant tumors. Nonneoplastic effects include potentiation of preexisting liver disease, cholelithiasis, and pancreatitis. (167 Refs)

55. THE MICROECOLOGY OF GASTRIC CANCER.

Correa P, Tannenbaum SR
Dept. Pathology, Louisiana State Univ. Medical Center, New Orleans, LA, 70112
ACS Symp Ser; 174():319-329 1981

Evidence supporting the proposition that the etiologic factors of stomach cancer, operate by modifying the microenvironment of the gastric mucosa is reviewed. The progressive histological lesions of the mucosa, the altered gastric secretions, and the dietary items which apparently have an overriding influence in the gastric carcinogenesis are discussed. Observations indicate that the disease is determined mostly by the environment and not by the race of the population. The populations migrating from a high-risk area to a low-risk area keep their original high risk in the host country. The process of cancerization in the stomach mucosa seems to be a continuum of changes which turns a normal cell into a metaplastic cell and then to a progressively dysplastic cell and finally a cancerous cell. The hydrogen ion concentration (pH) and alterations in other gastric secretions (pepsinogens, blood group substances) take place in chronic atrophic gastritis. The microecology of the junction areas with high and low pH provides the unusual circumstances of having nitrate, nitrite, abundant bacteria, and a wide range of pH. High nitrite levels in the gastric cavity have been associated with the acceleration of the gastric cancer induction in experimental animals. (33 Refs)

56. SWEDISH STUDIES FAIL TO SUPPORT THE HYPOTHESIS ON THE RELATIONSHIP BETWEEN COFFEE AND PANCREATIC CANCER.

Elinder CG, Millqvist K, Floderus-Myrhed B, Pershagen G
Hygieniska institution, Karolinska Institutet, Stockholm, Sweden
Lakartidningen; 78(42):3676-3677 1981

The possible relationship between coffee consumption and cancer of the pancreas was investigated in two studies in Sweden. One study included 22 patients who died of pancreatic cancer and 53 subjects who died of other causes (controls) during the period 1961-1974. A big number of smokers were among the pancreatic cancer patients (19/22 vs 34/53). No significant difference was found in coffee consumption between the two groups, and the consumption was even insignificantly lower among the cancer patients than among the controls. In another study, 10,945 sets of twins born during 1886-1925 were followed up between 1961-1980. Sixty-eight persons died of cancer of the pancreas during the period 1967-1980. Data on the coffee consumption are available for 51/68 persons. Smokers were among the patients with pancreatic cancer compared with their twin sisters or brothers. The av coffee consumption of the cancer patients was slightly but insignificantly higher than expected and compared with the twin sisters and brothers of the patients. The results of both studies fail to support the hypothesis on a significant relationship between coffee consumption of cancer of the pancreas. (5 Refs) (In SWE)

57. VITAMIN A STATUS AND ESOPHAGEAL CANCER RISK: EPIDEMIOLOGIC AND EXPERIMENTAL EVIDENCE FOR A POSITIVE ASSOCIATION.

van Rensburg SJ, Kruger EF, Louw ME, Du Plessis JP
Natl. Res. Inst. Nutritional Diseases, P. O. Box 70, Tygenberg 7505, South Africa
Nutr Rep Int; 24(6):1123-1131 1981

To evaluate the role of vitamin A in the etiology of esophageal cancer (EC), the occurrence of EC was studied in the Transkei territory (South Africa). A moderate incidence district (9.0/100,000) was used as a low risk region and a high incidence (50.5/ 100,000) district was used as the high risk region. The survey of the dietary intake and serum levels of vitamin A showed that deficient intake of vitamin A was 1-3x more common in the low risk groups. Elevated serum values were detected in 2-4 and 6-9 yr old children from high risk group. Experiments in BD IX rats showed that the incidence of methylbenzylnitrosamine-induced EC in animals who received a diet containing 30 mg/kg of vitamin A was 2x higher than that in the animals who received a diet containing 3 mg/ kg of vitamin A. The rats who received vitamin A deficient diet were free of EC. (15 Refs)

58. DIET AND CANCER OF THE ESOPHAGUS.

Mettlin C, Graham S, Priore R, Marshall J, Swanson M
Roswell Park Memorial Inst., 666 Elm St., Buffalo, NY
Nutr Cancer; 2(3):143-147 1981

The reported dietary, alcohol consumption, and smoking habits of 147 white male patients diagnosed with cancer of the esophagus were compared with the reports of 264 white male patients of comparable ages with diagnoses other than cancer. The associations of cigarette and alcohol use as risk factors were examined. Beer drinking was the beverage most associated with risk elevation. Persons reporting their occupation as laborers, service personnel, and operatives were considered as having significantly elevated relative risk (RR). RR associated with levels of vitamin A intake ranged from 0.68-1.28. Vitamine C intake was more highly associated with disease status. Because both vitamin A and vitamin C intake are highly dependent on the fruit and vegetable consumption habits of patients, the association of the simple reported frequency of consumption of fruit and vegetables was examined. RR ranging from 0.52-2.47 indicate a 4.75-fold increase in RR when consumption of fruits and vegetables was less than 40x/mo and was compared to a reported intake of greater than 81x/mo. The increase in risk represents a gradient consistent with a hypothetical dose-response relationship. No significant modification of the effect was observed across smoking, drinking, or smoking and drinking specific categories. No significant modification of the effect was observed in analyses of high risk groups of laborers, service and operative workers and other occupations, suggesting that the effects of diet may be independent of social class as measured by type of occupation. The findings of this investigation are consistent with evidence of lower risk associated with vegetable consumption in instances of colon, lung, bladder, oral, and laryngeal cancers, and with evidence for animals of tumor inhibition by vegetable properties. (18 Refs)

59. ESOPHAGEAL CANCER AMONG BLACK MEN IN WASHINGTON, D.C. II. ROLE OF NUTRITION.

Ziegler RG, Morris LE, Blot WJ, Pottern LM, Hoover R, Fraumeni JF
Environmental Epidemiology Branch, Div. Cancer Cause and Prevention, NCI, NIH, Public Health Service, U.S. Dept. Health and Human Services, Bethesda, MD, 20205
JNCI; 67(6):1199-1206 1981

A case-control study of esophageal cancer was conducted among the black male residents of Washington, D.C., to find reasons for the exceptionally high risk in this population. The next of kin of 120 esophageal cancer cases who died during 1975-1977 and of 250 D.C. black males who died of other causes were interviewed. Five indicators of general nutritional status - fresh or frozen meat and fish consumption, dairy product and egg consumption, fruit and vegetable consumption, relative wt (wt/ht(2)), and number of meals eaten per day - were each significantly and inversely correlated with the relative risk of esophageal cancer. Associations with other food groups were not apparent. The least nourished third of the study population, defined by any of these five measures, was at twice the risk of the most nourished third. None of these associations was markedly reduced by controlling for ethanol consumption, the other major risk factor in this population; smoking; socioeconomic status; or the other nutrition measures. When the three food group consumption measures were combined into a single overall index of general nutritional status, the relative risk of esophageal cancer between extremes was 14. Estimates of the intake of vitamin A, carotene, vitamin C, thiamine, and riboflavin were inversely associated with relative risk; but each micronutrient index was less strongly associated with risk than were the broad food groups that provide most of the micronutrient. Thus no specific micronutrient deficiency was identified. Instead, generally poor nutrition was the major dietary predictor of risk and may partially explain the susceptibility of urban black men to esophageal cancer. (Author abstract) (31 Refs)

60. NUTRIENT INTAKES AMONG RURAL TRANSKEIANS AT RISK FOR OESOPHAGEAL CANCER.

Groenewald G, Langenhoven ML, Beyers MJ, Du Plessis JP, Ferreira JJ, Van Rensburg SJ
(c/o van Rensburg), Natl. Res. Inst. Nutritional Diseases, P.O. Box 70, Tygerberg 7505, South Africa
S Afr Med J; 60(25):964-967 1981

The frequency of low nutrient intakes was investigated in areas of moderate and high esophageal cancer incidence in Transkei by means of 24-hr recall and habitual intake studies in children and nursing mothers. The results in moderate- and high-risk regions were similar and habitual intakes of protein, energy, phosphorus, iron, thiamine and vitamin A were generally satisfactory. Intakes of less than two-thirds the Recommended Dietary Allowances (RDA) had a high frequency of inadequate intakes for calcium (90%), nicotinic acid (79%), riboflavin (55%) and ascorbic acid (50%). It is concluded that the possibility of long-standing deficiencies of the latter three vitamins playing a role in esophageal carcinoge nesis should be considered. (Author abstract) (13 Refs)

61. EPIDEMIOLOGIC STUDY OF DRINKING WATER CHLORINATION AND WISCONSIN FEMALE CANCER MORTALITY.

Young TB, Kanarek MS, Tsiatis AA
Dept. Preventive Medicine, Univ. Wisconsin, 504 North Walnut St., Madison, WI, 53706
JNCI; 67(6):1191-1198 1981

The association between gastrointestinal, urinary tract, brain, lung, and breast cancer mortality and drinking water trihalomethane exposure, as estimated by av daily chlorine dosage of water source 20 yr past, was investigated for Wisconsin white females by use of a death certificate-based case-control study design. A total of 8,029 cancer deaths and 8,029 controls (noncancer deaths) matched on county of residence, year of death, and age were taken from mortality records of 28 counties for the years 1972-77. Data on characteristics and treatment of municipal water supplied to the residences of cases and controls were obtained from questionnaires sent to the water superintendents of the 202 waterworks associated with the sample. By the use of logistic regression analysis, odds ratios for site-specific cancer death associated with high, medium, and low chlorine-dosed water as compared to unchlorinated water exposure were determined; the control variables were urbanicity, marital status, and occupation. With the exception of cancer of the colon, no anatomic cancer site was significantly associated with any chlorine dose exposure category. For colon cancer, odds ratios of 1.51 [95% confidence interval (CI) = 1.06-2.14], 1.53 (95% CI = 1.08-2.0) and 1.53 (95% CI = 1.11-2.11) were obtained for high-, medium-, and low-dose chlorination, respectively (p less than or equal to 0.02). For colon cancer cases and controls exposed to water sources affected by rural runoff, odds ratios of 3.30 (95% CI = 1.45-7.48), 3.60 (95% CI = 1.57-8.26), and 2.74 (95% CI = 1.10-6.88) were observed for high, medium, and low chlorine dosages 20 yr past (p less than 0.025). (Author abstract) (40 Refs)

62. EPIDEMIOLOGICAL STUDY OF WORKERS ENGAGED IN THE MANUFACTURE OF CHROMIUM COMPOUNDS.

Satoh K, Fukuda Y, Torii K, Eng M, Katsuno N
Nippon Chemical Industrial Co., Ltd., 9-15-1 Kameido, Koto-ku, Tokyo 136, Japan
JOM; 23(12):835-838 1981

This is a study of the mortality of individuals engaged in the manufacture of chromium compounds (chromium work) at a plant in Tokyo, Japan, for 1 or more yr. Morbidity data and results of liver and kidney function tests were also reviewed. The subjects of the mortality study were 896 males, who engaged in the chromium work between 1918 and 1975. Workers who died or retired or left the work for other reasons before the end of the follow-up period (1978) and for whom the necessary data were obtainable are included. When compared with Japanese males, this group of workers was found to have a standard mortality rat io for respiratory cancer of 9.2, which indicates an excess risk. No excess risk of death was indicated for cancer in other organs of the body or for other diseases. No significant differences in morbidity, which would indicate that the exposed group contracted any specific diseases, including liver and kidney disorders, more easily than did the control group, were found. (Author abstract) (11 Refs)

63. EPIDEMIOLOGY OF GASTRIC CANCER IN CHILE.

Armijo R, Detels R, Coulson AH
Div. Epidemiology, Public Health Sch., Univ. California, Los Angeles, CA
Bol Of Sanit Panam; 91(4):362-368 1981

After Japan, Chile has the highest gastric cancer mortality rate (GCM) in the world. GCM is lowest in northern and southern Chile (20/100,000) and highest in the middle region (Maule, 52.5/100,000). Levels of nitrates and nitrites have been studied in vegetables, saliva, and urine of children in different parts of Chile. (9 Refs) (In SPA)

64. TOXIC AND METABOLIC LIVER INJURY.

Teschke R, Nishimura M, Gellert J
Medizinische Klinik D, Universitat Dusseldorf, Moorenstr. 5, D-4000 Dusseldorf, W. Germany
Leber Magen Darm; 11(5):227-234 1981

Studies on liver damage due to toxic substances and endogenous metabolites are reviewed. Liver cirrhosis due to phenylbutazone, dantrolen, diazepam, isoniazid, alpha-methyldopa, oxyphenisatin, azathioprin, mercaptopurine, methotrexate (MTX), and methyltestosterone was observed. Focal nodular hyperplasia due to oral contraceptives (ethinyl estradiol, mestranol, norethynodrel and norgestrel) was reported in the literature. These oral contraceptives, as well oxymetholone and methyltestosterone were found to induce hepatocellular adenoma. Hepatocellular carcinoma was found in patients treated with MTX, oral contraceptives, oxymetholone and methandrostenolone. (24 Refs) (In GER)

SELECTED PRE-CLINICAL STUDIES

65. HETEROTRANSPLANTATION OF HUMAN ESOPHAGEAL CARCINOMA TO NUDE MICE.

Kitamura M, Suda M, Nishihira T, Watanabe T, Kasai M
Second Dept. Surgery, Tohoku Univ. Sch. Medicine, Sendai 980, Japan
Tohoku J Exp Med; 135(3):259-264 1981

Twenty-four primary tumors, 13 metastatic lymph nodes, and one metastatic liver tumor obtained from 36 patients with esophageal carcinoma were transplanted to nude mice (BALB/c, nu/nu, both sexes, 6-8 wk old). Proliferation of tumor cells was observed in 17/38 transplanted tumors, including 10/24 primary lesions and 7/14 metastatic lesions. Four transplantable tumors were obtained, two from well-differentiated squamous cell carcinoma, and the others from poorly-differentiated squamous cell carcinoma or poorly-differentiated adenocarcinoma. In these four tumors, 3-11 passages were possible. Growth rate did not change remarkably during serial passages and only local growth of the four tumors was observed. (4 Refs)

66. N-NITROSO COMPOUNDS: DIET AND CANCER TRENDS; AN APPROACH TO THE PREVENTION OF GASTRIC CANCER.

Weisburger JH
American Health Foundation, Valhalla, NY, 10595
ACS Symp Ser; 174():305-317 1981

Documented evidence for human cases of cancer unambiguously associated with short chain dialkylnitrosamines detected in foods in the Western world has not been presented yet.

Other high risk regions have in common low intakes of foods with vitamin C. The risk factors for human gastric cancer include foods pickled with salt and saltpeter or residence in areas with high geochemical nitrate. Mutagenic activity was found for Salmonella typhimurium TA 1535 with an extract of a pickled fish frequently eaten in high risk Japan, which also induced glandular stomach cancer in rats. The formation of the mutagen can be blocked by vitamin C. In the control group (8 rats) fish extract alone was given, and no neoplastic changes in the stomach or pancreas were seen. Twelve rats were administered with extract of nitrite-treated fish. Glandular hyperplasia (6/12), squamous cell hyperplasia of the forestomach epithelium (5/12), and intestinal metaplasia was noted in this group. Several other neoplasias were noted in this group. Formation of nitrosoureido derivative can be blocked by vitamin C, vitamin E, and some other substances such as gallates. (66 Refs)

67. CLINICAL CORRELATIONS WITH DRUG SENSITIVITIES IN THE CLONOGENIC ASSAY. A RETROSPECTIVE STUDY.

Mann BD, Kern DH, Giuliano AE, Burk MW, Campbell MA, Kaiser LR, Morton DL
Div. Surgical Oncology, Univ. California Los Angeles Sch. Medicine, Factor Building, Los Angeles, CA, 90024
Arch Surg; 117(1):33-36 1982

We tested the ability of the in vitro clonogenic assay (CLAS) to predict clinical response for patients with solid tumors. Patients had objectively measurable disease and received at least one course of chemotherapy. The correlation between clinical responses and in vitro sensitivity was evaluated retrospectively. Tumor types included melanoma (19), sarcoma (5), hepatoma (1), and carcinoma of the stomach (2), colon (3), lung (1), and breast (1). Five patients received two separate courses of chemotherapy with different drugs or drug regimens. In 9 of 11 (82%) instances, tumors were sensitive to a particular drug, and the patient had at least 50% regression of tumor following treatment with the tested drug. Two patients whose tumors were sensitive in vitro had no evidence of clinical response. In 25 of 26 assays, the CLAS accurately predicted tumor resistance, and only one patient had evidence of clinical response (96%). Associations of in vitro results with clinical responses were highly significant. The CLAS can accurately predict the chemosensitivity of a variety of solid tumors. (Author abstract) (9 Refs)

68. CHARACTERIZATION OF THE MAJOR APOLIPOPROTEINS SECRETED BY TWO HUMAN HEPATOMA CELL LINES.

Zannis VI, Breslow JL, SanGiacomo TR, Aden DP, Knowles BB
Children's Hosp. Medical Center, Harvard Medical Sch., Boston, MA, 02115
Biochemistry; 20(25):7089-7096 1981

Two newly described human hepatoma derived cell lines, Hep G2 and Hep 3B, synthesize and secrete into the culture medium most of the major plasma apoproteins (apoA-I, apoA-II, apoB, apoC-II, apoC-III, ad apoE). The synthesized apoproteins were identified by direct two-dimensional gel analysis of the culture medium or by two-dimensional analysis following purification of the apoproteins by ultracentrifugation or immunoprecipitation. We found that the apoA-I synthesized by both of the hepatoma cell lines consists of two isoproteins designated 2 and 3 which are more basic than the major plasma apoA-I isoproteins designated 4 and 5. The apoE synthesized by both cell lines is composed mainly of an array of isoproteins with increasingly higher mol wt and lower isoelectric points as compared to those of the major apoE isoproteins found in plasma. These precursors of apoE are converted to the major apoE isoproteins upon treatment with Clostridium perfringens neuraminidase and represent sialo apoE isoproteins. ApoA-II, apoC-II, apoC-III-1, and apoC-III-2 correspond to the protein forms present in plasma. The human hepatoma cell lines (Hep G2 and Hep 3B) provide a unique model for studies of the regulation of human apoprotein and lipoprotein synthesis and catabolism. (Author abstract) (56 Refs)

69. ANTI-POLY(A) POLYMERASE ANTIBODIES IN SERA OF TUMOR-BEARING RATS AND HUMAN CANCER PATIENTS.

Stetler DA, Rose KM, Jacob ST
Dept. Pharmacology and Specialized Cancer Res. Center, Milton S. Hershey Medical Center, Pennsylvania State Univ., Hershey, PA, 17033
Proc Natl Acad Sci USA; 78(12):7732-7736 1981

Poly(A) polymerase (polynucleotide adenylyl-transferase; ATP:polynucleotide adenylyltransferase, EC 2.7.7.12) was covalently linked to diazobenzyloxymethyl-filters and used to screen the sera from a number of tumor-bearing rats and human cancer patients for antibodies to poly(A) polymerase. Sera from rats that had been inoculated with any of several Morris hepatomas or a mammary adenocarcinoma contained immunoglobulins capable of complexing with poly(A) polymerase. No antibodies to the enzyme could be detected in sera from control animals or from those bearing tumors for short periods of time. Antibodies to poly(A) polymerase were also observed in sera from human patients with leukemia, polycythemia vera, and Wilms tumor. The antibodies were not evident in sera from normal volunteers or from patients with nonneoplastic diseases. These included lupus erythematosus, a disorder in which antibodies are produced against an array of nuclear proteins. Immunoglobulins from the serum of one of the human patients were capable of inhibiting poly(A) polymerase activity in vitro, whereas those prepared from the serum of a normal volunteer did not affect enzyme activity. As determined by the diazobenzyloxymethyl-filter technique, the relative concentration of antibodies in the sera of an individual with leukemia (in remission) increased severalfold during a relapse. These data suggest that the presence of antibodies to poly(A) polymerase may be characteristic of sera from cancer patients and that the relative concentration of these antibodies may be indicative of the disease state. (Author abstract) (26 Refs)

70. EFFECT OF DOXORUBICIN ON LIVER REGENERATION AND HOST SURVIVAL AFTER TWO-THIRDS HEPATECTOMY IN RATS.

Tanaka Y, Nagasue N, Kanashima R, Inokuchi K, Shirota A
First Dept. Surgery, Nippon Medical Sch., 1-1-5 Sendagi, Bunkyo-ku, Tokyo 113, Japan
Cancer; 49(1):19-24 1982

The effects of doxorubicin (Adriamycin) on regenerating liver were studied after two-thirds hepatectomy in rats. In Group I, standard two-thirds hepatectomy was performed. Doxorubicin in a dose of 2 mg/kg (Group II) and 6 mg/kg (Group III) was given iv immediately after the same hepatectomy. In Group IV, 6 mg/kg doxorubicin was given after sham operation. Animal survival, body wt restoration, wet wt and mitotic activity of remnant livers, and serum albumin concentrations were examined 1-14 days after operation. The survival rates were 95.5% in Group I, 76.8% in Group II, 10.3%

in Group III, and 96.7% in Group IV. Although there were no differences in the residual liver weights among the hepatectomized groups, treatment with doxorubicin induced substantial, dose-dependent suppression and delay of liver cell division. Serum albumin levels dropped considerably in hepatectomized, doxorubicin-treated rats. Light microscopy showed degenerative changes with a single cell necrosis of hepatocytes in Group III. Death among rats hepatectomized and treated with doxorubicin was considered to be mainly due to the failure of residual livers since albumin synthesis was impaired and no marked changes were seen in vital organs other than the liver. For patients with hepatoma, the present results may indicate that the administration of adjuvant chemotherapy with doxorubicin, when necessary, immediately after hepatectomy, should be performed with great care. In the absence of such necessity, doxorubicin should be withheld until life-sustaining liver regeneration has taken place. (Author abstract) (23 Refs)

71. SEX-DEPENDENT METABOLISM AND BILIARY EXCRETION OF [2,4-(14)C] DINITROTOLUENE IN ISOLATED PERFUSED RAT LIVERS.

Bond JA, Medinsky MA, Dent JG, Rickert DE
(c/o Rickert), Chemical Industry Inst. Toxicology, P.O. Box 12137, Research Triangle Park, NC, 27709
J Pharmacol Exp Ther; 219(3):598-603 1981

The incidence of hepatocellular carcinoma in rats fed 35 mg/kg of 2,4-dinitrotoluene (DNT) is higher in males than in females. The existence of sex differences in hepatic metabolism and biliary excretion of DNT was studied in isolated perfused rat livers. Livers from 80-90-day-old male and female Fischer 344 rats were perfused for 30 min before addition of [2,4-14C]DNT. Aliquots of 1 ml were removed from the perfusate reservoir at 5, 10, 15, 30, 45, 60, 90 and 120 min after addition of DNT. The isolated perfused livers from male and female rats displayed a capacity for oxidation, reduction, acetylation and conjugation of DNT (or its metabolites). Oxidation of DNT to 2,4-dinitrobenzyl alcohol, followed by glucuronidation to 2,4-dinitrobenzyl alcohol glucuronide (DNBalcG) was the major route of DNT metabolism in both sexes. Formation of DNBalcG accounted for 10-30% of the initial DNT. After perfusion of livers with 20 uM DNT, larger quantities of DNBalcG were excreted in the bile by male than female livers (392 vs 172 nanomole) at a time when perfusates from female livers contained over 3x as much DNBalcG as male perfusates. These data suggest that that the major difference in the in vitro metabolism of DNT between male and female rats is the larger quantities of DNBalcG excreted in the bile of male rats than female rats. (13 Refs)

72. ENHANCEMENT OF EXPERIMENTAL PANCREATIC CANCER IN SYRIAN GOLDEN HAMSTERS BY DIETARY FAT.

Birt DF, Salmasi S, Pour PM

Eppley Inst. for Res. in Cancer, Univ. Nebraska Medical Center, 42d and Dewey Ave., Omaha, NE, 68105

JNCI; 67(6):1327-1332 1981

The effects of dietary fat on the induction and development of pancreatic ductular adenocarcinoma were studied in random-bred Syrian golden hamsters. Diets containing low-fat (LF) or high-fat (HF) levels of corn oil [4.5 or 18.0 g/385 kilocalorie (kcal)], contributing 10 or 41% of the cal, respectively, were fed either before or after a single injection of N-nitrosobis(2-oxopropyl)amine (BOP) (10 mg/kg body wt). Control hamsters were fed corn oil at a medium-fat (MF) level (9 g/385 kcal) for life. The incidence of ductular adenocarcinomas increased in both males and females (LF diet, 16%; HF diet, 34%) when the HF diet was fed after BOP treatment. The av number of carcinomas per carcinoma-bearing animal also increased (LF diet, 1.3; HF diet, 3.0), but the carcinoma incidence was not influenced by these diets being fed before carcinogen treatment. The incidence of ductular adenomas was high with all treatments and was not influenced by diet. However, the number of adenomas was increased in animals fed HF diets. In addition, the incidence of acinar cell nodules was elevated in animals fed the MF and HF diets after BOP administration. These results showed that dietary fat modified the development of experimental ductular adenocarcinom a of the pancreas. (Author abstract) (31 Refs)

★ U. S. GOVERNMENT PRINTING OFFICE : 1982—361-847/118

AUTHOR INDEX WITH CITATION NUMBERS

Abeyounis CJ 30
Abrao A 51
Aden DP 68
Agarwal VK 27
Ahmad Z 29
Armijo R 63
Asada I 20
Baba M 43
Belpomme D 40
Bergemann W 1
Bergemann W 12
Berjian R 31
Berkel J 47
Besson A 17
Beyers MJ 60
Bhargava SC 27
Birt DF 72
Blot WJ 59
Blumberg BS 49
Bogh L 21
Boiron M 40
Bond JA 71
Bonfils S 36
Borowitz MJ 32
Bossen EH 32
Bowry TR 29
Breslow JL 68
Bromster D 1
Burk MW 67
Campbell MA 67
Cappellano RS 51
Carlstrom K 25
Carraway R 23
Cayot M 10
Chaikhouni A 52
Chaloupka F 45
Chevillotte P 10
Chu TM 30
Chu TM 31
Clouse M 19
Coppola V 5
Correa P 55
Coulomb M 3
Coulson AH 63
Cremer M 47
Cripps C 24
Cronan JJ 42
Dajani EZ 1
Decker R 12
Den Hartog Jage 47
Dent JG 71
Detels R 63
DiMagno EP 9
Dinan C 42
Do Amarante AP 51
Douglass HO 31
Du Plessis JP 57
Du Plessis JP 60
Elffors L 1
Elinder CG 56
Eng M 62
Farr GH 15
Favre JP 10
Ferreira JJ 60
Feurle GE 23
Floderus-Myrhed 56
Forssmann WG 23
Forster PJ 28
Fraumeni JF 59
Fukuda Y 62
Gaeta L 46
Gaillard MT 32
Gaus W 39
Geindre M 3
Gellert J 64
Gisselbrecht C 40
Giuliano AE 67
Go VL 9
Graham S 58
Gray GF 7
Grindulis KA 28
Groenewald G 60
Grube D 23
Hajdu SI 15
Haruyama K 16
Harvey PR 24
Hasegawa A 6
Heinkel K 12
Helmstaedter V 23
Herfarth C 12
Herfarth C 39
Hervoir P 36
Hirashima T 38
Hisano S 41
Hokama Y 24
Honjo I 20
Hoover R 59
Hubball S 28
Ida T 41
Iitsuka Y 11
Ikeda S 4
Inaji H 31
Inokuchi K 70
Ishak KG 54
Itoh H 4
Iwata K 6
Jacob ST 69
Jordan GL 18
Kaibara N 11
Kaiser LR 67
Kamasako A 11
Kanarek MS 61
Kanashima R 70
Karasawa K 2
Kasai M 65
Katsuno N 62
Kern DH 67
Kew MC 48
Kimmig JM 43
Kimura A 11
Kimura LH 24
Kinsella T 19
Kitamura M 65
Knowles BB 68
Koga S 11
Kondo K 6
Kruger EF 57
Kudoh H 11
Kuriyama M 31
Landor JH 36
Langenhoven ML 60
Lebas JF 3
Levine SJ 32
Linder MM 35
Linder MM 39
Lindsay PC 14
Lipford EH 42
Logan SE 44
Lokich J 19
London WT 50
Longmire WP 44
Loor R 31
Louw ME 57
Luska G 22
Maeta M 11
Malcolm A 19
Manegold BC 35
Mann BD 67
Manzo ML 31
Marshall J 58
Martin ED 8
Marty M 40
Maruyama M 12
Maruyama M 35
Maruyama M 43
Mathe G 40
Mathur D 27
Mathur GS 27
Mathur RL 27
Matsumoto Y 20
Matzen P 21
Mazzeo F 46
McConkey B 28
Medinsky MA 71
Meier SJ 44
Mennicken C 35
Merkle P 12
Mettlin C 58
Metzgar RS 32
Mignon M 36
Mignot L 40
Mikami N 34
Milgrom F 30
Millqvist K 56
Mitzkat HJ 22
Montupet P 13
Moreaux J 13
Morimoto T 41
Morris LE 59
Morton DL 44
Morton DL 67
Mozzillo N 46
Mueller PR 42
Muto R 5
Nagasue N 70
Nakagawa M 41
Nakase A 41
Nawalkha PL 27

Nicolai JJ 31
Ninomiya T 43
Nishihira T 65
Nishimura M 64
Ogawa K 34
Oguro Y 38
Ohtani Y 34
Ordonez N 14
Otten G 22
Ozawa K 20
Papachristou DN 15
Papsidero LD 30
Pejchl S 45
Pejchlova J 45
Perri J 19
Pershagen G 56
Piccolboni D 46
Possik RA 51
Pottern LM 59
Pour PM 72
Pousette A 25
Priore R 58
Queisser W 39
Raaf JH 14
Ramming KP 44
Regueyra FI 52
Reichard H 1
Riccardi M 5
Rickert DE 71
Roher HD 23
Rose KM 69
Sadaruddin A 26
Saegesser F 17
Saiga T 33
Sakakibara N 34
Salmasi S 72
SanGiacomo TR 68
Sarrazin R 3
Satoh K 6
Satoh K 62
Schlag P 12
Schlag P 39
Schmid M 53
Schreml W 39
Shah MV 29
Shimano T 30
Shirota A 70
Shiu MH 15
Shorter RG 9
Simeone JF 42
Skoldefors H 25
Sorensen S 21
Stetler DA 69
Stevens JR 52
Suda M 65
Suzuki T 20
Swanson M 58
Takagi I 2
Tanaka M 4
Tanaka Y 70
Tanida O 11
Tannenbaum SR 55
Tarumi T 41
Taylor WF 9
Teschke R 64
Theve NO 25
Thorbjarnarson 37
Thorbjarnarson 7
Tischbirek K 23
Tobe T 20
Torii K 62
Trede M 35
Trede M 39
Trigalou D 10
Tsiatis AA 61
Tuck FL 32
Turco G 5
Tytgat GN 31
Tytgat GN 38
Tytgat GN 47
Uberi J 26
Uchita Y 6
Ust A 1
Van Dusen L 30
Van Rensburg SJ 57
Van Rensburg SJ 60
Verrengia D 5
Viard H 10
Watanabe T 65
Weisburger JH 66
Wilking N 25
Yagawa H 34
Yamagata H 6
Yasuoka H 6
Yorimitsu Y 6
Yoshimoto H 4
Young TB 61
Zannis VI 68
Zick R 22
Ziegler RG 59

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT 19/82/06

NCI/ICRDB/CT19 82/06

PB82-939406

ICRDB CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/06

JUNE, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

SPECIAL ANNOUNCEMENTS FROM THE ICRDB PROGRAM WILL PERIODICALLY APPEAR AS FILLER PAGES IN THE BACK OF YOUR CANCERGRAMS. WATCH FOR THEM!

In this issue:

- SCREENING AND DIAGNOSIS........................ 1-5
- PATHOLOGY, STAGING, AND PROGNOSIS........................ 6-9
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS........................ 10-30
- SURGICAL AND RADIATION THERAPY........ 31-36
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY........................ 37-39
- SELECTED CLINICAL CORRELATIONS...... 40-43
- REHABILITATION ASPECTS........................ 44-48

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
JUL 8 1982
U. S. GOVT. PUBS.
DEPOSITORY [illegible]

- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER........................ 49-63
- SELECTED PRE-CLINICAL STUDIES........... 64-68

SCREENING AND DIAGNOSIS

1. PROSPECTIVE EVALUATION OF BIOPSY NUMBER IN THE DIAGNOSIS OF ESOPHAGEAL AND GASTRIC CARCINOMA.

Graham DY, Schwartz JT, Cain GD, Gyorkey F
Veterans Admin. Hosp., 2002 Holcombe Blvd., Houston, TX, 77211
Gastroenterology; 82(2):228-231 1982

A prospective trial was performed in which biopsy and cytology specimens were obtained on 202 consecutive patients including 47 with esophageal or gastric carcinomas. The first biopsy specimen yielded a correct diagnosis in the majority if instances: 70% of gastric carcinomas and 93% of eso phageal carcinomas. Three additional biopsy specimens increased the

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20. 3173/2:

yield to greater than 95%, a total of seven biopsy specimens yielded greater than 98%. Seven biopsy and cytology specimens yielded the correct diagnosis in all patients. Seventeen percent of all lesions subsequently proven to be malignant were thought to be benign, endoscopically. This reinforces the belief that all lesions seen at endoscopy should have biopsies performed and at least seven specimens should be obtained. (Author abstract) (12 Refs)

2. SIGNIFICANCE OF INTRAOPERATIVE ESOPHAGOGASTRODUODENOSCOPY IN SURGICAL PRACTICE.

Kun M, Szanto I, Eros A, Vamosi NI, Banai J
II. Sebeszeti Klinika, Orvostovabbkepzo Intezet, Budapest, Hungary
Orv Hetil; 122(47):2891-2892 1981

Intraoperative esophagogastroduodenoscopy (IEGD) was performed in 55 patients subjected to surgery for diseases of the gastrointestinal tract. The patients included six patients with gastric tumors five with early gastric cancer, in whom IEGD permitted the exact extension of the tumor to be determined. Multiple carcinoma was found endoscopically in 2/5 patients with early gastric cancer, and more radical surgery than had been planned, was performed. (9 Refs) (In HUN)

3. DOUBLE DUCT SIGN: REASSESSED SIGNIFICANCE IN ERCP.

Plumley TF, Rohrmann CA, Freeny PC, Silverstein FE, Ball TJ
(c/o Rohrmann) Dept. Radiology, Univ. Washington Sch. Medicine, Seattle, WA, 98195
AJR; 138(1):31-35 1982

The double duct sign, defined as an abnormality of both the pancreatic duct and the contiguous part of the intrapancreatic common bile duct, was found in 52 of 1,180 patients studied by endoscopic retrograde cholangiopancreatography. Thirty patients were proved to have pancreatic malignancy and 22, benign pancreatic disease. Specific ductal characteristics found to indicate a malignant process were ductal obstruction, especially of the common bile duct, close proximity of the biductal lesions, a short stenotic segment of the common bile duct removed from the papilla, and abrupt, irregular transition from normal to stenotic or obstructed duct. Ductal characteristics suggesting a benign process were long length of common bile duct stenosis, calcium deposits, pseudocyst formation, and ectasia of pancreatic ductal branches central to the main duct lesion. This analysis indicates that the double duct sign per se is not disease specific, but when other ductal characteristics are assessed as a component of this finding, the ability to differentiate benign from malignant pancreatic disease is enhanced. (Author abstract) (11 Refs)

4. TRANSTRACHEAL MEDIASTINAL LYMPHOGRAPHY FOR VISUALIZATION OF METASTATIC LYMPH NODES IN CARCINOMA OF THE ESOPHAGUS.

Sugimachi K, Okudaira Y, Ueo H, Ikeda M, Inokuchi K
Dept. Surgery II, Kyushu Univ., Fukuoka, Japan
Surg Gynecol Obstet; 154(1):34-38 1981

Mediastinal lymphography was carried out preoperatively upon 15 patients with carcinoma of the thoracic part of the esophagus. The tracheal bifurcation was punctured, and contrast medium was slowly injected. Mediastinal lymphograms were taken within 24 hr and, again, 3 and 7 days after this injection. The paratracheal lymph nodes were demonstrated in almost all of the patients, and a filling defect was observed in three patients, leading to possible metastatic involvement. In seven patients, the right pulmonary hilar lymph nodes were demonstrated, and no node was considered to be metastatic. In three, paraesophageal lymph nodes were preoperatively diagnosed as metastatic. All seven lymph nodes in which metastasis was suspected were confirmed to be metastatic at pathologic examination. The smallest node correctly assessed as metastatic was 6 by 6 mm. (Author abstract) (8 Refs)

5. NUCLEAR MAGNETIC RESONANCE IMAGING OF THE LIVER: INITIAL EXPERIENCE.

Doyle FH, Pennock JM, Banks LM, McDonnell MJ, Bydder GM, Steiner RE, Young IR, Clarke GJ, Pasmore T, Gilderdale DJ
(c/o Steiner) Dept. Diagnostic Radiology, Royal Postgraduate Medical Sch., Hammersmith Hosp., Ducane Road, London W12 OHS, England
AJR; 138(2):193-200 1982

Nuclear magnetic resonance (NMR) scans of the liver were obtained in 12 normal volunteers and 32 patients using a whole-body machine developed by Thorn-EMI Ltd, and the results were compared with x-ray computed tomography (CT). Two types of NMR scan, saturation-recovery and inversion-recovery, were performed in order to obtain values for the spin-lattice relaxation time, T1. Although the saturation-recovery scans show little soft-tissue detail, the inversion-recovery scans demonstrated the interlobar fissure, hepatic veins, portal veins, bile ducts, and gallbladder. In comparison with CT (Siemens Somatom 2), both types of NMR scan showed some blurring due to respiratory movement but much less linear artifact across the liver from the air-fluid interface in the stomach. Focal disease within the liver was demonstrated by both CT and NMR, although an area of focal atrophy and another of hepatic infarction were only recognized with NMR. In diffuse disease the pattern varied. In steatosis CT was virtually diagnostic, while NMR showed no specific features. In hemochromatosis, hepatitis, eight cases of cirrhosis, and one of Wilson disease, both techniques showed abnormalities of varying specificity. In two cases of cirrhosis and one of primary biliary cirrhosis, only the NMR scan was abnormal. Nuclear magnetic resonance images are now sufficiently anatomically detailed to permit serious comparisons with technically advanced computed tomography. The information revealed is fundamentally different and can be expected to have some diagnostic utility. (Author abstract) (9 Refs)

PATHOLOGY, STAGING, AND PROGNOSIS

6. LONG-TERM SURVIVAL OF PATIENTS OPERATED ON FOR GASTRIC CANCER.

Petri I, Horvath O, Csikos M, Petri A, Imre J
I. Sebeszeti Klinika, Szegedi Orvostudomanyi Egyetem, Szeged, Hungary
Orv Hetil; 122(44):2703-2707 1981

The long-term survival rates of 600 patients (440 men and 160 women) operated on for gastric cancer were determined. Differentiated adenocarcinoma was diagnosed in 176 patients, undifferentiated adenocarcinoma in 167, differentiated mucoid carcinoma in 49, undifferentiated mucoid carcinoma in 117, anaplastic carcinoma in 45, cancer in ulcer in 23, and malignant tumor of mesenchymal origin in 21. Eleven patients were in Stage I, 54 in Stage II, 424 in Stage III, and 111 in Stage IV. Lymph node metastases were found in 405 patients. Proximal subtotal resection (PSR) with esophagogastrostomy or esophagojejunostomy was performed in 209 patients, total gastrectomy (TG) in 196 and distal subtotal gastrectomy (DSG) in 195. The surgery was radical in 263 patients, palliative in 337. The overall 3-and 5-yr survival rates were 21.5% and 13.6%, respectively: 100% and 66.7% in Stage I, 63.3% and 37.3% in Stage II, 21.1% and 14% in Stage III and 1% and 0% in Stage IV. The 5-and 10-yr survival rates were 13.4% and 7.7%, respectively, after palliative surgery and 32.4% and 21.2% after radical surgery: 14.6% and 9% after PSR, 12.2% and 8.3% after TG and 39.6% and 25.1% after DSG. The 5-and 10-yr survival rates were 44.7% and 30.6%, respectively, for the patients without lymph node metastases and 10.8% and 5.7% for those with lymph node metastases; 19.6% and 12% for men and 26.5% and 17.5% for women, and 17% and 7.1%, respectively, for patients older than 70 yr. The 10-yr survival rates were 20.9% for patients with undifferentiated adenocarcinoma, 11.8% for those with undifferentiated adenocarcinoma, 10.9% for those with differentiated mucoid carcinoma, 5.9% for those with undifferentiated mucoid carcinoma, 4.6% for those with anaplastic carcinoma, 0% for those with cancer in ulcer, and 44.9% for those with malignant mesenchymal tumors. (65 Refs) (In HUN)

7. DETECTION AND NATURAL PROGRESSION OF EARLY OESOPHAGEAL CARCINOMA: PRELIMINARY COMMUNICATION.

Miao Y, Gu X, Li G, Chen W
Cancer Inst., Chinese Acad. Medical Sciences, Beijing, People's Republic of China
J R Soc Med; 74(12):884-886 1981

Twenty-three cases of untreated early carcinoma of the esophagus are described. The detection and observation of the natural progression of these early carcinomas were performed by means of abrasive cytology, barium esophagography, and/or fiberoptic esophagoscopy. Eleven cases had developed late carcinoma with a mean of 55.5 +-29.0 mo after the initial detection of the disease, while in the remaining 12 cases the disease had maintained its early stage of progression for 74.4 +-27.3 mo without developing into late carcinoma. Further, of the 23 patients, 18 had lived beyond 5 yr, making a natural 5-yr survival rate of 78.3%. The relatively long period of dormancy at the early stage of esophageal carcinoma might thus influence the 5-yr survival rate of this disease currently treated by surgery. (Author abstract) (14 Refs)

8. MEMBRANOUS OBSTRUCTION OF THE INFERIOR VENA CAVA AND HEPATOCELLULAR CARCINOMA IN SOUTH AFRICA.

Simson IW
Inst. Pathology, P.O. Box 2034, Pretoria 0001, South Africa
Gastroenterology; 82(2):171-178 1982

This study was undertaken to establish the frequency of membranous obstruction of the inferior vena cava in South Africa, to characterize the pathology of the lesion and to define its relationship to hepatocellular carcinoma. Over a 9-yr period 101 cases of membranous obstruction of the inferior vena cava were collected. The inflow of the inferior vena cava into the right atrium was occluded in all cases in which it was examined, and two basic patterns of the abnormality in the hepatic portion of the inferior vena cava have been described. The histologic picture in the liver was a chronic congestive fibrosis. In 44 cases of congestive fibrosis, diagnosed from liver biopsy specimens from black patients over a 5-yr period, vena caval membranes were demonstrated on cavography in 38 (86.4%). Hepatocellular carcinoma developed in 48 of the 101 cases (47.5%), indicating the importance of this defect in the pathogenesis of hepatocellular carcinoma in South Africa. (Author abstract) (19 Refs)

9. EARLY DETECTION AND SURGICAL TREATMENT OF ESOPHAGEAL CANCER.

Huang GJ
Cancer Inst. and Hosp., Chinese Acad. Medical Sciences, Peking, People's Rpublic of China
Jpn J Surg; 11(6):399-405 1981

Application of abrasive cytologic examination by means of a 'balloon catheter' for detection of esophageal carcinoma (EC) in high-incidence areas and results of surgical treatment of EC are discussed.The instrument for collecting cytologic specimens consists of a semirigid plastic tube connected to a balloon covered with fine silk mesh. The diagnosis is established by finding of definite cancer cells and is usually confirmed at the second examination. Application of abrasive cytology technique in mass screening has led to detection of a large number of EC in very early stages, of which only approx 50% showed positive x-ray findings and 75% showed positive endoscopic findings. Intraluminal staining with toluidine blue through a fiberoptic esophagoscope gave positive biopsy in 83.9% of cases. Resectability rate in 237 EC patients with Stage I, who underwent surgery was 100%, and the mortality during operation was 2.5%. Carcinoma in situ was detected in 35.4% resected specimens, and early infiltrative carcinoma of mucosa and submucosa in 64.6%. Five-yr survival rate (SR) following resection was 85.9%, and 10-yr SR was 55.6%. Histopathological classification of 1,647 patients with more advanced EC, showed that 72.3% were in Stage III and 8.8% were in Stage IV, with either extra-esophageal tumor invasion and regional regional lymph node involvement, or distant metastases. Survival rates were calculated by the number of resections; 5-yr SR was 30.3%, 10-yr SR was 21.2%, and 15-yr SR was 16.2%. Prognosis is related to staging of the disease, the extent of tumor invasion, length of lesion, and the presence or absence of nodal involvement. (7 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

10. CARCINOPLACENTAL ALKALINE PHOSPHATASE IN MALIGNANT AND PREMALIGNANT CONDITIONS OF THE HUMAN DIGESTIVE TRACT.

Skinner JM, Whitehead R
Dept. Pathology, Flinders Univ. South Australia, Bedford Park 5042, South Australia
Virchows Arch [Pathol Anat]; 394(1/2):109-118 1981

The presence of carcinoplacental alkaline phosphatase (CP Alk P) was demonstrated in the cells of malignant and premalignant states of the human stomach, colon and rectum using the immunoperoxidase technique. It was shown to be present in 7 out of 18 carcinomas of stomach and 7 of 17 cases of carcinoma of colon and rectum. In the putative premalignant states it was demonstrated in 4 of 15 cases of intestinal metaplasia associated with gastric carcinoma, and 9 of 12 tubulovillous adenomas of colon. However, it was also demonstrated in five of eight metaplastic polyps of colon which are neoplastic and in 9 of 17 cases of intestinal metaplasia not associated with cancer of the stomach. It was not seen in normal gastric mucosa and only faintly in 1 of 11 samples of normal colon. CP Alk P has been shown to be a specific marker of malignancy in a wide range of human cancers when studied in sera from patients or in tissue culture of tumor cells. In this study however, although a statistical difference exists between normal and diseased tissue the marker appears as frequently in non-neoplastic states. It is concluded that CP Alk P is, in tissues, a marker of proliferative activity in cells, rather than neoplastic or malignant change. In this respect it is similar in some respects to carcinoembryonic antigen, but not other markers of placental origin such as pregnancy specific beta, glycoprotein. (Author abstract) (20 Refs)

11. ACTIVITIES OF FOUR ENZYMES IN BLOOD SERUM DETERMINED SIMULTANEOUSLY IN PATIENTS WITH MALIGNANCY BEFORE RADICAL SURGERY.

Araki E
Clinical Lab., Natl. Cancer Center Hosp., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo 104, Japan
Jpn J Clin Oncol; 11(3):463-467 1981

The activities of four serum enzymes, alkaline phosphatase (ALP), SGOT, SGPT, and lactate dehydrogenase (LDH), were determined simultaneously by kinetic methods (SGOT, SGPT, LDH) and b y the Bessey-Lowry method (ALP) in 351 health subjects and groups of patients with carcinoma (lung, 379; stomach, 797; cervix, 293; breast, 865; liver, 30; pancreas, 6). Analyses of the enzymes were performed just prior to radical surgery, to see if diagnosis of malignancy could be improved. The combined assays gave positive rates (percent) of 56.5, 35.9, 25.4, 25.3, 93.3, and 100 in carcinomas of the lung, stomach, breast, cervix, liver, and pancreas, respectively. LDH gave the highest rate of positivity. While each type of carcinoma appeared to have its own pattern of serum enzyme activities, the combined measurement of enzymes may be of practical diagnostic value. (13 Refs)

12. PRESENCE OF AN ATYPICAL THERMOLABILE SPECIES OF BETA-HEXOSAMINIDASE B IN METASTATIC-TUMOUR TISSUE OF HUMAN LIVER.

Alhadeff JA, Holzinger RT
Dept. Neurosciences, Sch. Medicine, Univ. California San Diego, La Jolla, CA, 92093
Biochem J; 201(1):95-99 1982

An atypical thermolabile species of Hex B (hexosaminidase B) has been found in metastatic-tumor sites of human liver which has a thermostability curve similar to that of Hex A (hexosaminidase A), which is present in decreased amounts relative to the Hex A isoenzyme, and which exhibits decreased relative activity at acidic pH values (2.6-3.6) when compared with control-liver Hex B. This atypical Hex B isoenzyme has a normal apparent Michaelis constant (0.6 mM) for 4-methylumbelliferyl 2-deoxy-2-acetamido-beta-D-glucopyranoside. The presence of this atypical Hex B suggests that variant beta-chains are being produced in metastatic-tumor tissue. (Author abstract) (14 Refs)

13. PLASMA SECRETIN LEVELS IN TOTAL PANCREATECTOMY AND PANCREATICODUODENECTOMY.

Ogasahara K, Suzuki T, Tobe T
First Dept. Surgery, Kyoto Univ. Faculty Medicine, Kyoto 606, Japan
Jpn J Surg; 11(6):433-439 1981

Biliary secretion after major pancreatectomy (PE) was evaluated by measuring secretory responses of plasma secretin levels (PSL) to intrajejunal infusion of HCl in patients who underwent total PE and pancreaticoduodenectomy (PED). PSL was measured in 11 patients who underwent total PE and 8 patients with PED. Ten patients who underwent gastrectomy served as controls. All patients after total PE had been diagnosed as having ductal carcinoma of the pancreas. Patients after PED included two patients with carcinoma of the head of pancreas, four with carcinoma of the ampulla, and two with carcinoma of the terminal bile duct. No significant statistical differences were noted in the mean basal PSL in all groups of patients and controls, although PSL in patients with PE and PED were lower than in controls. Following initiation of 0.1 N HCl infusion, PSL increased significantly during the first 15 min and returned to basal PSL within 60 min in all groups. Mean peak PSL were 98.6 +-10.0 picog (pg)/ml in patients with total PE, 159.0 +-23.1 pg/ml in patients with PED, and 166.6 +-30.0 pg/ml in controls. Significant statistical differences were noted at min 10, 15, and 20 between patients with PE and patients with PED, but no significant differences were noted between patients with PED and controls. Among patients with total PE, those with Billroth II type anastomosis showed a significantly impaired response compared with patients with Billroth I type anastomosis. Results showed that biliary secretion is more impaired in patients with total PE than in patients with PED. Billroth I type anastomosis for reconstruction procedure of the alimentary tract appears more feasible. In the case of major PE, much attention should be given to biliary secretion to decrease the possibility of ulcer occurrence at the anastomosis and to improve the digestion-absorption of fat. (11 Refs)

14. DIAGNOSIS OF INSULINOMA. DETERMINATION OF INSULIN, C-PEPTIDE AND PROINSULIN IN THE BLOOD TO DIFFERENTIATE BETWEEN ENDOGENOUS AND EXOGENOUS HYPERINSULINISM.

Hanssen KF, Torjesen PA, Heding LG
Medisinsk avdeling B, Aker sykehus, Oslo 5, Norway
Tidsskr Nor Laegeforen; 101(34-36):1957-1960 1981

Distinction between endogenous and exogenous hyperinsulinism in connection with the diagnosis of insulinoma is described on the basis of the report of the cases of five patients with suspected insulinoma, in three of which insulinoma was confirmed histologically upon surgery. One patient had many normal insulin levels during the 72-hr fasting. The blood glucose levels were low, indicative of insulinoma. Transhepatic vein catheterization with measurement of the insulin levels failed to show high insulin levels in any of the pancreatic veins. Preoperatively elevated plasma proinsulin levels decreased after extirpation of insulinoma in another patient. The diagnosis of insulinoma was established in another patient on the basis of low C-peptide levels together with high total insulin level. Increased insulin levels without increased C-peptide level and with reduced blood glucose levels were found in another tumor-free patient under the effect of exogenous insulin supply. The blood glucose and insulin levels should be determined at short intervals during a 72-hr fasting in patients with suspected insulinoma. If high insulin levels are found and self-afflicted hyperinsulinism is suspected, C-peptide and proinsulin should also be determined additionally. Proinsulin measurements are of great value in the absence of insulin antibodies. (10 Refs) (In NOR)

15. LOCATION OF AN INSULINOMA BY TRANSHEPATIC PHLEBOGRAPHY WITH STAGED INSULIN ASSAYS.

Duprey J, Frija G, Bacourt F, Giraudet P, Prinseau J, Franc B, Basin C, Colliard M

Policlinique, Hopital Ambroise Pare, 9, av Charles De Gaulle, F 92100 Boulogne, France

Nouv Presse Med; 10(45):3711-3714 1981

Insulinoma was easily diagnosed in a 73-yr-old woman who had organic hypoglycemia associated with hyperinsulinism, but the tumor could not be located by echotomography and computerized tomography. The state of the patient's arteries precluded arteriography. Pancreatic phlebography was carried out by the portal transhepatic route and blood was collected at different levels for plasma insulin assays. A very high gradient at the pancreatic isthmus indicated the site of the tumor, which was found on surgery to be precisely there and could be enucleated. The technique cannot be used systematically to locate insulinomas, but it is unquestionably helpful when the tumor cannot be located by other methods or when these are contraindicated. (Author abstract) (15 Refs) (In FRE)

16. INTRAOPERATIVE BIOCHEMICAL LOCALIZATION OF INSULINOMA BY QUICK RADIOIMMUNOASSAY.

Teichmann RK, Spelsberg F, Heberer G

Dept. Surgery, Univ. Munich, Klinkum Grosshadern, Marchioninistrasse 15, 8000 Munich 70, W. Germany

Am J Surg; 143(1):113-115 1982

In patients with organic hyperinsulinism, intraoperative determination of insulin concentrations in veins draining the pancreas might help localize the tumor. We have developed a radioimmunoassay measuring insulin within 30 minutes. At operation, blood samples are taken at various sites in the splenic, superior mesenteric and portal veins for insulin determinations. In all six patients, the highest insulin concentrations correlated with the site of the tumor. Also, small insulinomas less than 1 cm in diameter could be found. In one patient the tumor appeared to secrete mainly proinsulin. By this procedure we hope to avoid blind distal resection of the pancreas and possibly invasive preoperative diagnostic procedures. (Author abstract) (7 Refs)

17. PANCREATIC SECRETING GLUCAGONOMA: CLINICAL, RADIOLOGICAL, HORMONAL, AND MORPHOLOGICAL STUDY; INHIBITORY EFFECT OF SOMATOSTATIN-14.

Vinel JP, Pradere B, Voigt JJ, Pradayrol L, Pascal JP

(c/o Pascal) Service d'Hepato-Gastroeneterologie, C.H.U., F-31059 Toulouse-Purpan, France

Gastroenterol Clin Biol; 5(12):1155-1159 1981

The nature of the hormonal products secreted, the mode of secretion, and the biological diagnosis of a secreting pancreatic glucagonoma as found in a 52-yr-old woman are described.The patient presented with skin eruptions, wt loss, glossitis, balanitis, and a recent development of diabetes. Arteriography and glucagon measurement in the portal area allowed tumor localization, and detection of the hyperglucagonomia. A caudal spleno-pancreatectomy was performed. Anatomopathological characteristics of the glucagonoma are described. (23 Refs) (In FRE)

18. GASTRIC MUCOSAL PROSTAGLANDIN E LEVELS IN PATIENTS WITH GASTRIC ULCER DISEASE AND CARCINOMA.

Wright JP, Young GO, Klaff LJ, Weers LA, Price SK, Marks IN
Gastrointestinal Clinic, Groote Schuur Hosp., OBSERVATORY 7925, Cape Town, South Africa
Gastroenterology; 82(2):263-267 1982

Prostaglandin E was measured by radioimmunoassay in endoscopic biopsy specimens obtained from 7 normal healthy volunteers, 28 patients with a benign gastric ulcer, and 10 with a malignant gastric ulcer. Biopsy specimens were taken from the antral and body mucosa and from the ulcer edge in patients. The median value in normal antrum specimens was 5.15 (4.44-8.40) ng PGE/mg protein which was more than the body with 3.50 (1.86-9.28), p less than 0.05. In the 28 patients with benign gastric ulcer the ulcer edge contained 2.33 (0.48-7.67) ng PGE/mg protein which was more than the antrum with 1.06 (0.30-4.17) or the body with 0.97 (0.20-7.67), p less than 0.01 respectively. The antral and body levels in patients with gastric ulcers were lower than those found in the normal volunteers, p less than 0.01. There was no difference between the levels found in patients with malignant as opposed to benign gastric ulcer. In patients with gastric ulcer lower levels of PGE were found in body mucosa with atrophic gastritis 0.83 (0.53-2.66) ng PGE/mg protein as compared with histologically normal body mucosa 2.25 (0.63-7.67), p less than 0.05. These results suggest that mucosal PGE levels are reduced in patients with gastric ulcer disease and that this may be due to the presence of atrophic gastritis. (Author abstract) (20 Refs)

19. SISTER-CHROMATID EXCHANGE IN PATIENTS WITH HEPATITIS.

Ghosh PK
Dept. Anthropology, Univ. Delhi, Delhi-110 007, India
Mutat Res; 103(3-6):303-306 1982

The lymphocytes of 28 adult patients, 12 of whom had virus 'A' and 16 of whom had virus 'B' hepatitis as determined by serum antigen tests, were examined for sister-chromatid exchanges (SCEs) induced by bromodeoxyuridine (10 ug/ml). Patients with virus 'A' hepatitis had a mean SCE/cell of 8.61 +-2.21, those with virus 'B' had a mean SCE/cell of 10.12 +-2.83; 20 control patients' lymphocytes averaged 5.21 +-1.26 SCE/cell. After complete chemical and biochemical recovery, 2/6 of the virus 'A' hepatitis patients and 1/5 of the virus 'B' hepatitis patients had reduced SCEs, although not to levels equivalent to controls. Failure of SCE levels to return to control levels may have been due to the presence of the not replaced virally-affected lymphocytes still in the system after the patients had recovered. (17 Refs)

20. SCREENING METHOD FOR THE DETECTION OF AFLATOXIN AND METABOLITES IN HUMAN URINE: AFLATOXINS B1, G1, M1, B2A, G2A, AFLATOXICOLS I AND II.

Lovelace CE, Njapau H, Salter LF, Bayley AC
Univ. Zambia, P.O. Box 32379, Lusaka (Zambia), South Africa
J Chromatogr; 227(1):256-261 1982

Ingestion of aflatoxins has been associated with the occurrence of hepatocellula r carcinoma (HCC), and the identity of the eventual carcinogenic agent has been closely linked to the way in which aflatoxin is metabolized in the liver. It has been shown that the sensitivity of animal species to the carcinogenic effects of aflatoxin B1 can be directly correlated with hepatic activity and its transformation into aflatoxicol. In man, hepatic metabolism and detoxification of aflatoxins may be related to a number of environmental influences. Among these, the presence of acute or chronic liver pathology (cirrhosis, HCC, hepatitis) might influence the metabolism of aflatoxin in the liver, and this effect may be manifested in the type and concentration of metabolites excreted. Identification and quantification of aflatoxin metabolites may yield information concerning the mechanisms of aflatoxin metabolism in man. This paper describes the successful extension of a simple technique for the extraction and quantification of aflatoxin M1 from human urine to aflatoxin B1 and the metabolites aflatoxicol I and aflatoxicol II, aflatoxin B2a, aflatoxin G2a and the derivative tetrahydrodeoxyaflatoxin B1. (Author abstract) (13 Refs)

21. HEPATITIS B ANTIGEN IN THE LIVER IN HEPATOCELLULAR CARCINOMA IN SHIKOKU, JAPAN.

Akagi G, Furuya K, Otsuka H

2nd Dept. Pathology, Sch. Medicine, Kuramoto-cho 3-18-15, Tokushima 770, Japan

Cancer; 49(4):678-682 1982

An analysis of 105 autopsy cases (77 male, 28 female) of hepatocellular carcinoma (HCC) showed that 90 cases (85.7%) were associated with liver cirrhosis, of which 75 cases (83.3%) were of the macronodular type. Hepatitis B surface antigen (HBsAg) was detected with orcein stain in the hepatic tissue in 58 cases (55.2%). The incidence of HBsAg in cases of HCC patients with cirrhosis (58.9%) was higher, but not significantly, than that in those without cirrhosis (33.3%). The mean age of HBsAg-positive cases was 5 yr less than that of HBsAg-negative cases, the age distributions therefore being significantly different. (Author abstract) (43 Refs)

22. PANCREATIC ONCOFETAL ANTIGEN IN PANCREATIC JUICES. PARTIAL CHEMICAL CHARACTERIZATION AND DIAGNOSTIC APPLICATION OF A PANCREATIC CANCER-ASSOCIATED ANTIGEN.

Schmiegel WH, Becker WM, Arndt R, Hamann A, Soehendra N, Jessen K, Classen M, Thiele HG

(c/o Thiele) Dept. Clinical Immunology, 1st Medical Univ. Clinic, Martinistrasse 52, 2 Hamburg 20, W. Germany

Scand J Gastroenterol; 16(8):1033-1039 1981

Antisera were raised in rabbits to an antigenic structure present in fetal pancreas tissue, pancreatic tumor tissue, and pancreatic juices and in sera obtained from pancreatic cancer patients. The first chemical data indicate that this pancreatic oncofetal antigen is distinct from CEA, NCA, and NCA2 and is not glycolipid in nature. Immunoelectrophoretic analyses demonstrate that pancreatic oncofetal antigen is a protein or a glycoprotein, which displays microheterogeneity. The apparent mol wt of the basic unit of pancreatic oncofetal antigen is estimated to about 40 K. So far 234 pancreatic juices have been investigated for pancreatic oncofetal antigen. Pancreatic oncofetal antigen was detected within the pancreatic juices from 59 of 74 (80%) pancreatic carcinoma patients but could be traced in only 16%-26% of samples obtained from patients with other diseases. (Author abstract) (21 Refs)

23. IMMUNOBLASTIC LYMPHOMA OF SMALL INTESTINE COMPLICATING LATE-ONSET IMMUNODEFICIENCY.

Gonzalez-Vitale JC, Gomez LG, Goldblum RM, Goldman AS, Patterson M

Dept. Pathology, Union Hosp., Elkton, MD, 21921

Cancer; 49(3):445-449 1982

A malignant lymphoma of the small bowel developed in a 75-year-old woman who had severe late-onset hypogammaglobulinemia with intestinal malabsorption and nodular lymphoid hyperplasia. The tumor arose in the midst of the abnormal lymphoid follicles and appeared to be of B-immunoblastic type. Immunoperoxidase staining, however, failed to reveal immunoglobulins in the tumor cells. In vitro immunologic studies showed that immunoglobulin production by the patient's peripheral lymphocytes had decreased and that this decrease was mediated by hydrocortisone-sensitive suppressor cells. These findings suggest that nodular lymphoid hyperplasia of the intestine in the context of severe immunodeficiency is a premalignant condition. (Author abstract) (18 Refs)

24. A COMBINED MORPHOLOGIC AND IMMUNOLOGIC APPROACH TO THE DIAGNOSIS OF GASTROINTESTINAL LYMPHOMAS. I. MALIGNANT LYMPHOMA OF THE STOMACH (A CLINICOPATHOLOGIC STUDY OF 22 CASES).

Seo IS, Binkley WB, Warner TF, Warfel KA
Dept. Pathology, Indiana Univ. Sch. Medicine, 1100 West Michigan St., Indianapolis, IN, 46223
Cancer; 49(3):493-501 1982

Twenty-two cases of primary gastric non-Hodgkin's lymphoma, which occurred over a 20-yr period, were reviewed. Eighteen tumors were studied using an immunoperoxidase method, and the presence of intracytoplasmic monoclonal immunoglobulin (Ig) in 9 (50%) suggested a B-cell origin. Four tumors (22%) contained intracytoplasmic muramidase (lysozyme), suggesting a true histiocytic origin. Five tumors (28%) did not contain immunoglobulin or muramidase. The muramidase-positive 'true histiocytic lymphoma' could not be differentiated from histiocytic lymphoma of lymphocytic origin using light microscopic examination alone. The patients with B-cell lymphoma survived significantly longer than patients in the other two groups. The differentiation between true histiocytic lymphoma and other conditions is discussed. (Author abstract) (29 Refs)

25. CIRCULATING IMMUNE COMPLEXES IN CARCINOMA OF THE PANCREAS.

Mihas AA, Volanakis JE, Schrohenloher RE, Mihas TA
Dept. Medicine, Univ. Alabama Sch. Medicine, Birmingham, AL
Anticancer Res; 1(3):155-158 1981

Sera from 20 patients with carcinoma of the pancreas (14 men, 6 women, mean age 46 yr) were investigated for the presence of immune complexes. Sera from eight patients with primary biliary cirrhosis (PBC: all women, mean age 44 yr) and from five patients with sclerosing cholangitis (SC: 3 men, 2 women, mean age 34 yr) were analyzed for comparison. The presence of immune complexes in sera was investigated using the C1q binding assay (C1q-BA), Raji cell radioimmune assay (RC-RA), and monoclonal rheumatoid factor radioimmunoassay (MRF-RIA). Circulating immune complexes were detected by C1q-BA in 45% of patients with carcinoma, 75% of those with PBC, and 60% of those with SC. With MRF-RIA, only one patient with carcinoma and none of the PBC and SC patients had detectable immune complexes. With RC-RA, immune complexes were detected in one patient with carcinoma and two with PBC. When serum immune complex levels were determined for control and disease groups by all three assays, only the C1q-BA gave results that were significantly different from those of the control group. No correlation between serum immune complexes and conventional liver function tests could be made. Differentiation of these three clinical entities could not be made on the basis of the presence of circulating immune complexes. (21 Refs)

26. REACTIVITY OF GASTRIC CANCER PATIENTS IN LEUKOCYTE MIGRATION INHIBITION TEST TO 3M KCL EXTRACTS FROM GASTRIC TUMORS.

Kojima O, Oh A, Kitagawa N, Uehara Y, Nishioka B, Fujita Y, Majima S
1st Dept. Surgery, Kyoto Prefectural Univ. Medicine, Kawarama-chi, Kyoto, 602, Japan
Jpn J Surg; 11(6):413-421 1981

Relationship between the leukocyte migration inhibition (LMI) reactivity and the clinical status of patients with gastric cancer (GC) and cross-reactivities between patients with GC and patients with colorectal cancer (CC) were studied. Leukocytes form patients with GC and other malignant and non-malignant diseases of the gastrointestinal tract and from healthy controls were tested for LMI using five different, allogeneic 3M KCl soluble extracts from GC tissues. Normal range of migration index (MI) was 0.77-1.18 derived by calculation of the mean MI of 10 healthy controls with cancer extracts; MI not in this range were considered pathological. Using the LMI test with single tumor extract pathologic MI was found in 48% of 79 GC patients. MI was significantly less in patients with CC and other non-malignant gastrointestinal diseases (NGD). In the LMI test, testing each blood sample with five different tumor extracts, 79% of GC patients were reactive. CC patients showed positive reaction, and no positive reaction showed NGD patients. Positive reactivity in GC patients was significantly higher than in other studied groups of patients. GC extracts had a wide range of cross-reactivity when compared with colorectal tumor extracts which showed a relatively restricted cross-reactivity. LMI test when tested by a panel mode appears to express cell-mediated immunity against tumor associated antigens of GC. (27 Refs)

27. ABSOLUTE GRANULOCYTE, LYMPHOCYTE, AND MONOCYTE COUNTS. USEFUL DETERMINANTS OF PROGNOSIS FOR PATIENTS WITH METASTATIC CANCER OF THE STOMACH.

Bruckner HW, Lavin PT, Plaxe SC, Storch JA, Livstone EM
Div. Medical Oncology, Mount Sinai Sch. Medicine, 1 Gustave L. Levy Pl, New York, NY, 10029
JAMA; 247(7):1004-1006 1982

Pretreatment absolute granulocyte (less than 6,000/cu mm), lymphocyte (greater than 1,500/cu mm), and monocyte (300 to 900/cu mm) counts are three independent indicators of good prognosis for patients with metastatic gastric cancer. These tests improve the prediction of survival significantly compared with estimates based on ambulatory status alone. If the patient is complete ambulatory, median survival (MS) is 27.6 wk, and it improves further to 37.6 wk if results of two hematology tests indicate a good prognosis. If the patient is partially ambulatory, MS is 16.2 wk; however, if results of two blood tests indicate a good prognosis, MS is 25.7 wk, and if two tests indicate a poor prognosis, MS is only 11.1 wk. The model corrected a false assessment of a poor prognosis for 56% of all patients. (Author abstract) (8 Refs)

28. ELEVATED CYTOSTATIC ACTIVITY OF MONOCYTES FROM CANCER PATIENTS.

Mashiba H, Matsunaga K, Yagawa K, Nomura Y, Yoshinaga H, Furusawa M, Jimi S
Div. Immunology, Natl. Kyushu Cancer Center, 595 Notame, Minami-ku, Fukuoka 815, Japan
Gan; 72(6):848-853 1981

Cytostatic activity of peripheral blood monocytes from patients with head and neck cancer, gastro-intestinal cancer, uterine cervical cancer, benign tumors of the head and neck, inflammatory diseases and pulmonary tuberculosis was studied by using a cultured lymphoid cell line as the target cell. Significantly higher cytostatic activities were observed at an effector-target cell ratio of 5:1 in these patients (except for pulmonary tuberculosis patients) than in healthy controls. The cytostatic activity of the monocytes from gastric cancer patients was more elevated in advanced stages than in Stage I. The cytostatic activity of culture supernatants of monocytes from cancer patients did not differ from that of healthy controls. The activity of the monocytes following radiation therapy combined with chemotherapy in patients with head and neck cancer was depressed. The significance of elevated cytostatic activity of monocytes in cancer patients is discussed. (Author abstract) (37 Refs)

29. MONOCYTE COUNT, MONOCYTE CHEMOTAXIS AND CHEMOTACTIC FACTOR INACTIVATOR IN GASTRIC CANCER PATIENTS.

Yamane T, Sakita M, Kasuga M, Nishioka B, Fujita Y, Majima S
Frist Dept., Prefectural Univ. Medicine, Kawara-machi, Kamigyo-ku, Kyoto 602, Japan
Jpn J Surg; 11(6):422-427 1981

Presence of qualitative and quantitative abnormalities in the circulating monocytes of gastric cancer (GC) patients and chemotactic properties of monocytes were studied. Monocyte count in the peripheral blood, chemotactic responsiveness (MCR), and chemotactic factor inactivator (CFI) were measured in 66 patients with GC. Monocyte counts in GC patients in the advanced stage of the disease were significantly higher (344 +-168/cubic mm) than in other groups of patients. MCR was significantly depressed in GC patients in the advanced stage of the disease (88.8 +-22.3) compared with findings in control groups (110.0 +-14.0). Sixty-seven percent of the patients with Stage IV carcinoma had abnormally depressed responses. CFI was significantly higher in GC patients (45.1 +-15.5) than in the control groups (22.1 +-11.1). Positive correlation was noted between the degree of inhibition and extent of cancer progress. Results indicate that although monocytes are within the normal limits at an early stage of the disease, the number of circulating monocytes increases with advancement of cancer and patients with advanced carcinoma have significant monocytosis. Monocytes in cancer patients show a decreased chemotactic activity. In the sera of patients is a relatively large amount of substances that inactivate chemotactic factors. Monocytosis observed in patient with advanced cancer may be explained by interference of chemotactic factors with the ability of monocytes to accumulate as macrophages in tumor site. Results support the hypothesis that abnormalities of circulating monocytes, as macrophage precursors, may hinder immunological host defense mechanisms. (16 Refs)

30. DECREASED LEVELS OF CIRCULATING LYTIC ANTI-T IN THE SERUM OF PATIENTS WITH METASTATIC GASTROINTESTINAL CANCER: A CORRELATION WITH DISEASE BURDEN.

Bray J, Maclean GD, Dusel FJ, McPherson TA

Dept. Medicine, Cross Cancer Inst., 11560 University Ave., Edmonton, Alberta, T6G 1Z2, Canada

Clin Exp Immunol; 47(1):176-182 1982

Using a cytotoxicity assay, we have shown that all of 40 normal human sera tested contained antibodies cytotoxic for neuraminidase-treated red blood cells in the presence of complement. The antibodies were shown to be specific for the T disaccharide by studies using a synthetic T antigen Certain patients with metastatic gastrointestinal cancer were found to have depressed serum levels of anti-T when compared to normal controls. There was a correlation between depression of circulating anti-T and disease burden in that 83% of patients with extensive disease had lower than normal levels of cytotoxic anti-T as compared to 45% of patients with moderate disease and none with minimal disease. There was no corre lation between the concentration of cytotoxic anti-T and the age of the patients, time since surgery or the type of therapy the patient was receiving. Patients with low levels of cytotoxic anti-T had normal levels of cytotoxic anti-sheep red blood cell antibody. Measurement of circulating anti-T in the serum of certain cancer patients may prove valuable in the monitoring of disease progression. (Author abstract) (23 Refs)

SURGICAL AND RADIATION THERAPY

31. SURGICAL RESULTS IN EARLY CARCINOMA OF THE STOMACH: THE EFFECT OF EXTENSIVE LYMPH NODE REMOVAL.

Yoshino K, Saito H, Matsumoto S, Haruyama K

(c/o P. C. Alnor) Chirurgische Klinik, Stadtische Krankenanstalten, Salzdahlumer Str., D-3300 Braunschweig, W. Germany

Aktuel Chir; 16(6):207-209 1981

The relationships between lymph node metastases (LNM), the extent of lymphadenectomy, and survival were studied in 220 cases of early carcinoma of the stomach (ECS). Operative survival rate was 98%. Results of examination of lymph nodes in 215 patients with ECS were compared with results in 684 patients with advanced carcinoma of the stomach (ACS). LNM were found in 14.4% of patients with ECS and 77.5% of patients with ACS. LNM were found in 20.3% of submucosal ECS, 6.5% of mucosal ECS, 81.8% of serosal ACS, and 54.9% of ACS with infiltration of the lamina propria. Most LNM were of perigastric nature. More distant LNM occurred with increasing infiltration depth of the primary tumor. Thirty-nine patients with ECS were treated by limited perigastric lymphadenectomy (LA); 177 were treated by extended LA. The actuarial survival rate after 5 yr was 76.5 +-6.9% for perigastric LA and 94.0 +-2.1% for extended LA. The actuarial survival rate after 10 yr was 57.5 +-8.6% for perigastric LA and 82.8 +-5.2% for extended LA. When compared with age-matched control groups, 5-and 10-yr survival rates for extended LA exceeded 100%. Results indicate that extended LA should be performed in cases of ECS. (10 Refs) (In GER)

32. LONG-TERM RESULTS OF SURGERY FOR CARCINOID TUMOURS OF THE GASTRO-INTESTINAL TRACT.

Kirkegaard P, Hjortrup A, Halse C, Luke M, Christiansen J

Dept. Surgery D,, Glostrup Hosp., Copenhagen, Denmark

Acta Chir Scand; 147(8):693-695 1981

Fifty-four patients were followed-up 1-22 yr (median 11 yr) after histopathological verification of a carcinoid tumor. Four patients died before operation; 41 patients had their lesion in the appendix, 13 in different extra-appendiceal sites in the gastrointestinal tract. There was a significant difference between the median ages and the mortality rates in the two groups. Only one patient with an appendiceal tumor died of his disease. Appendiceal carcinoid, even with local spreading to the serosa and local lymph nodes, seemed to be adequately treated by a simple appendectomy. Extensive surgery, following the principles of treatment for malignant tumors, should be undertaken, when spread to the cecum or ascending colon is present or when the tumor is of extra-appendiceal origin. (Author abstract) (9 Refs)

33. THERAPEUTIC IVALON EMBOLIZATION OF HEPATIC TUMORS.

Chuang VP, Wallace S, Soo CS, Charnsangavej C, Bowers T

Dept. Diagnostic Radiology, Univ. Texas System Cancer Center, M.D. Anderson Hosp. and Tumor Inst., 6723 Bertner Ave., Houston, TX, 77030

AJR; 138(2):289-294 1982

Ivalon particles were used for 80 hepatic artery embolizations in 50 patients who had either primary or metastatic hepatic neoplasms. Ten patients died within 1-5 mo and the remaining 40 patients were still alive. The post-hepatic embolization syndrome was identical to that following Gelfoam embolization. Follow-up hepatic angiography in 20 patients revealed tumor response to embolization in 17 patients. Ivalon particles were easier to use and caused more peripheral and persistent occlusion than Gelfoam. The results suggest that Ivalon particles are safe and feasible for hepatic artery embolization. (Author abstract) (16 Refs)

34. MULTIMODAL TREATMENT FOR ADVANCED CANCER OF THE PANCREAS.

Onodera T, Okamoto A, Ito I, Matsuda T

Dept. Surgery and Radiology, Tokyo Metropolitan Komagome Hosp., Bunkyo-ku 18-22, Tokyo 113, Japan

World J Surg; 5(5):759-761 1981

Advanced cancer of the pancreas in 26 patients was treated by a combination of intraoperative radiotherapy and chemotherapy, during which parenteral nutrition was employed. At laparotomy a high-energy electron beam (3,000 rads) was administered by Betatron directly to the tumor; some patients received external irradiation of 3,000 rads by linear x-ray. Chemotherapy consisted of 5-fluorouracil (250-600 mg/day) or FT 207 (600-1,000 mg/day), plus intermittent adriamycin (60 mg). Survival ranged from immediate death to greater than 36 mo, with success in patients with invasion to the portal vein and invasion to the duodenum, stomach or mesentery, but less than 6 mo survival in patients with multiple metastasis to the liver or dissemination to the peritoneum. Reduction in tumor size by intraoperative radiotherapy was apparent. Radiotherapy also relieved pain in some patients. (no Refs)

35. ADENOCARCINOMA OF THE AMPULLA OF VATER: DIAGNOSIS AND TREATMENT.

Walsh DB, Eckhauser FE, Cronenwett JL, Turcotte JG, Lindenauer SM

Dept. Surgery (112), Veterans Admin. Medical Center, 2215 Fuller Road, Ann Arbor, MI, 48105

Ann Surg; 195(2):152-157 1982

Fifty-one patients underwent operation for adenocarcinoma of the ampulla of Vater. Seven patients underwent palliative bypass, with an operative mortality of 28.6%; 44 additional patients underwent potentially curative pancreaticoduodenal resection (PDR), with an operative mortality of 15. 9%. Postoperative complications occurred in 63% of patients. Postoperative gastrointestinal bleeding was observed in 11 of 44 patients who underwent PDR (25%). Although anastomotic ulcers (AU) were directly implicated in five cases (45%), the 12% incidence of AU-related bleeding among 33 patients who underwent PDR without truncal vagotomy (TV) was not significantly different from the 9% incidence observed in 11 patients who underwent PDR plus TV. However, performance of TV appeared to result in a higher incidence of postoperative pulmonary complications. Five patients who underwent curative resection survived for 5 yr (11%). Only one of seven patients who underwent palliative bypass survived 3 yr (14%), and none survived to 5 yr. Acceptable survival rates following resectional therapy warrant an aggressive approach to this tumor. Further, our experience suggests that TV may increase postoperative patient morbidity without actually providing any protection from anastomotic ulceration. (Author abstract) (36 Refs)

36. CLINICAL EXPERIENCES WITH THE RADIOSENSITIZER MISONIDAZOL.

Bamberg M, Tamulevicius P, Streffer C, Scherer E

Strahlenklinik, Universitatsklinikums Essen, Hufelandstr. 55, D-4300 Essen 1, W. Germany

Strahlentherapie; 157(8):524-536 1981

The principle of action of sensitizers with electron affinity is explained and the development of these radiosensitizing substances up to the clinical use of Misonidazol (MIS; Ro-07-0582) is shown. With special regard to the pharmacokinetic action of this substance, the therapeutic effects of MIS were examined in 10 patients with brain tumors of high malignancy (400 mg/m2) and 4 patients with esophageal carcinomas (1 g/m2), all these patients having reached the clinical Phase III. Four other patients with recurrent brain tumors received a dose of 1 g/m2 of MIS before each irradiation. Apart from slight neurotoxic and gastrointestinal side effects, the applied doses of MIS were generally well tolerated. Only in one case a generalized maculopapular exanthema developed which regressed completely within a few days. No correlation could be found between the subjective side effects and the plasma values determined by means of high pressure liquid chromatography (HPLC). After 1 to 4 hr following oral application, the maximum plasma concentrations were measured, the half-life (T1/2) varying in all patients between 5 and 10 hr. It was not possible to demonstrate an influence of dexamethasone on the plasma concentration of half-life of MIS in the brain tumor patients. The cerebrospinal fluid concentrations of MIS which may be used as an index for the concentrations in brain tumors, are closely corresponding plasma values. There was no correlation between MIS concentrations in plasma and saliva, so that the determination of MIS in the saliva cannot be recommended as a routine method for control examinations. Apart from the unchanged MIS, Demethylmisonidazol (DEMIS; Ro-05-9963), the product of demethylation, could be identified as the principal metabolite in urine. Only up to 40% of the MIS doses administered was found in form of MIS or DEMIS. The first preliminary results of the study on brain tumors (108 patients) do not seem to show any therapeutic advantage for glioma patients as against those patients who received only placebos. (Author abstract) (56 Refs) (In GER)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

37. PHASE II STUDY OF ANGUIDINE IN GASTROINTESTINAL MALIGNANCIES: A SOUTHWEST ONCOLOGY GROUP STUDY.

Bukowski R, Vaughn C, Bottomley R, Chen T

Southwest Oncology Group, Operations Office, 3500 Rainbow Blvd, Suite 100, Kansas City, KS, 66103

Cancer Treat Rep; 66(2):381-383 1982

The Southwest Oncology Group conducted a Phase II study of anguidine in 134 patients with gastrointestinal malignancies. Anguidine was administered as a 4-hour infusion at doses of 3.0 and 4.5 mg/m2 daily x 5. Response rates for patients with colon carcinoma were 22% (4 of 18 patients without previous chemotherapy) and 6% (4 of 63 patients with previous chemotherapy). There were no responses in patients with pancreatic cancer (4 patients) or gastric cancer (6). Toxic effects included thrombocytopenia (19.8%), leukopenia (18.8%), nausea and vomiting (49%), hypotension (37%), and confusion (12%). Antitumor activity of anguidine in patients with colon cancer may be similar to that of 5-FU, but nonhematologic toxicity is substantial. (Author abstract) (5 Refs)

38. TREATMENT OF HEPATOCELLULAR CARCINOMA BY INTRA-ARTERIAL INFUSION WITH MITOMYCIN C.

Nishioka M, Noda K, Fukumoto Y, Kodama T, Okita K, Shigeta K, Nishimura H, Harada T, Takemoto T

First Div., Dept. Internal Medicine, Yamaguchi Univ. Sch. Medicine, Ube, Yamaguchi 755, Japan

Bull Yamaguchi Med Sch; 28(1/2):57-62 1981

Twenty-nine patients with hepatocellular carcinoma (PHC) were given oral administration of 5-Fluorouracil (or Futraful) and intermittent intra-arterial infusion with 10-20 mg of Mitomycin C (MMC). Objective responses such as decreased serum alpha-fetoprotein level, decrease in the liver size, and prolongation of the survival time were found in 15, 14, and 13 out of 29 patients respectively. Subjective symptoms such as weakness, abdominal pain, and loss of appetite were improved in 7 of 29 patients. Of control patients with PHC who received oral administration of 5-Fu (or Futraful) alone, or intravenous injection of 4 mg of MMC twice a wk, the objective responses were observed in 1 of 13 patients. This indicates significant therapeutic effect of intra-arterial infusion of MMC on patients with PHC. Patients with severe liver dysfunction, decreased number of peripheral lymphocytes, or high level of serum alkaline phosphatase were unsuitable for this infusion. A significant decrease of serum hemoglobin level was observed as a side effect of intra-arterial infusion of MMC. (Author abstract) (12 Refs)

39. A CLINICAL TRIAL OF AMYGDALIN (LAETRILE) IN THE TREATMENT OF HUMAN CANCER.

Moertel CG, Fleming TR, Rubin J, Kvols LK, Sarna G, Koch R, Currie VE, Young CW, Jones SE, Davignon JP
Dept. Oncology, Mayo Comprehensive Cancer Center, Rochester, MN, 55905

N Engl J Med; 306(4):201-206 1982

The effects of amygdalin (laetrile) in 178 preterminal cancer patients are described. All patients had histologically proven cancer for which no standard treatment was known to be curative or to extend life expectancy. Patients had had no surgery, radiation therapy, or chemotherapy for at least 1 mo and were in generally good condition. Concurrent with amygdalin therapy, patients received metabolic therapy consisting of specific diet, pancreatic enzymes, and vitamins. Amygdalin was administered in 21 daily iv injections at a daily dose of 4.5 g/square meter body surface area. Afterwards, oral maintenance therapy was initiated at a dose of 0.5 g tid. Toxic symptoms were mild, transient, or accompanied by advancing cancer and thus possibly not related to drug dosage. Only 1/175 patients showed partial response. This patient had gastric carcinoma with metastases to the cervical lymph nodes. The patient died of cancer 37 wk after the start of therapy. Ninety-five patients had measurable progression of disease at termination of iv amygdalin. Median survival for all patients was 4.8 mo from the start of therapy. No value of concurrent megadose vitamin administration was noted. (13 Refs)

SELECTED CLINICAL CORRELATIONS

40. THROMBOSIS AND PANCREATIC CARCINOMA REVISITED.

Verghese A, Haws CC, Thomas E
(c/o Thomas) Div. Gastroenterology, 111D, Veterans Admin. Medical Center, Johnson City, TN, 37684

J Natl Med Assoc; 74(1):85-87 1982

Recurrent pulmonary embolism which occurred in a 70-yr-old man and resulted from thrombophlebitis associated with pancreatic carcinoma is reported. The patient was admitted with left-sided pleuritic chest pain, hemoptysis, and swelling and pain in the left calf of 3 days duration. Computerized axial tomography revealed a mass in the tail of the pancreas. Exploratory laparotomy confirmed the presence of a poorly differentiated adenocarcinoma. Recurrent episodes of spontaneous thrombophlebitis or refractoriness to treatment should prompt a workup that includes complete blood count, urinalysis, stool examination for occult blood, and chest x-ray. Women should have thorough gynecologic examination and PAP smear. Removal of an occult primary tumor often leads to a better response to therapy for thrombophlebitis. (8 Refs)

41. MANAGEMENT OF PRIMARY GASTRIC LYMPHOMA.

Shiu MH, Karas M, Nisce L, Lee BJ, Filippa DA, Lieberman PH
Dept. Surgery, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY, 10021

Ann Surg; 195(2):196-202 1982

A retrospective study of 51 patients treated for primary gastric lymphoma was made to evaluate the influence of clinicopathologic features and the method of treatment on survival. The lymphocytic type of tumor showed a higher survival rate than the histiocytic type. Tumors that involved only the gastric wall resulted in a 5-yr survival rate of 62%, as compared with 50% for tumors that involved also the adjacent gastric lymph nodes, and 25% for those involving the distant gastric lymph nodes. Treatment by subtotal, total, or extended forms of gastric resection without postoperative radiation gave a 5-yr survival rate of 33%. Resection followed by radiation yielded a higher survival rate of 67%. The best results were obtained in 13 patients who received higher doses of radiation: 11 (85%) survived 5 or more yr. One-third of the patients developed manifestations of systemic malignant lymphoma after curative therapy. These observations suggest a planned multimodal therapeutic program for this disease. (Author abstract) (22 Refs)

42. IS THERE ANY JUSTIFICATION TO THE SCINTIGRAPHY AND ECHOTOMOGRAPHY B ASSOCIATION FOR THE TRACKING DOWN OF HEPATIC METASTASES?.

Boucherie JC, Morand L, Paillard J, Vallee D, Plainfosse MC, Alexandre JH, Baillet J

Service de Chirurgie Generale et Digestive, Hopital Broussais, 96, ru Didot, 75014 Paris, France

Sem Hop Paris; 58(4):250-252 1982

Regarding the tracking down of hepatic metastases, a study was made on 58 patients presenting either digestive or genital adenocarcinoma. The determining criterion of selection was the carrying out of the three following tests within the same mo (Technetium 99 Scintigraphy, Echotomography B and surgery). The global breakdown of exact answers is in favor of echography (72% against 53%), echography being more reliable than scintigraphy. Therefore echotomography B seems to be the first morphological method that should be proposed; and for improving the tracking down, scintigraphy makes the interpretation of the results more difficult, and reduces the number of correct answers. (Author abstract) (11 Refs) (In FRE)

43. A PROSPECTIVE ANALYSIS OF LABORATORY TESTS AND IMAGING STUDIES TO DETECT HEPATIC LESIONS.

Kemeny MM, Sugarbaker PH, Smith TJ, Edwards BK, Shawker T, Vermess M, Jones AE

(c/o Sugarbaker), NIH, Building 10, Room 10N116, Bethesda, MD, 20205

Ann Surg; 195(2):163-167 1982

A prospective study of ability of laboratory tests and liver imaging tests to detect hepatic metastases was performed. Eighty patients at risk for hepatic metastases but without clinical e vidence of disease were tested with 13 laboratory tests and 3 liver imaging tests. No single laboratory test had greater than 65% accuracy in the detection of hepatic lesions. No combination of the laboratory tests increased this accuracy. If the laboratory tests were used with one of the liver imaging tests, the accuracy was improved in some combinations to 76%. The CEA assay when analyzed in patients with colorectal primaries had an accuracy of 79%. The results show that the laboratory tests alone are not sufficiently accurate to detect liver metastases. Additional accuracy can be obtained by the combined use of a single liver imaging test and selected laboratory tests. Use of all the liver imaging tests and laboratory tests lowers the accuracy and increases the expense and thus is unnecessary. (Author abstract) (22 Refs)

REHABILITATION ASPECTS

44. PREOPERATIVE PARENTERAL FEEDING IN PATIENTS WITH GASTROINTESTINAL CARCINOMA.

Muller JM, Dienst C, Brenner U, Pichlmaier H
Dept. Surgery, Univ. Cologne, Joseph Stelzmann-Str. 9, 5 Cologne 41, W. Germany
Lancet; 2(8263):68-71 1981

In a comparative clinical trial to examine the influence of 10 days of preoperative parenteral nutrition (PPN) on the postoperative complication rate for gastrointestinal carcinoma 59 patients (controls) received the regular hospital diet and 66 received PPN. The two groups were similar in nutritional status and in distribution of site and stage of tumor and type of operation. The rates of postoperative wound infection, pneumonia, major complications, and mortality were generally lower in the PPN group, but the differences were significant only for major complications and mortality. The clinical results can be explained by the improvement in various indices of humoral and cellular immunocompetence and the protein status in the PPN group and their deterioration in the control group during the preoperative course. (Author abstract) (23 Refs)

45. COMPARATIVE STUDIES ON NEW METHODS OF ALIMENTATION OF GASTRECTOMIZED PATIENTS.

Bojanowicz K, Ciesielski L
Klinika Gastroenterologiczna, IMW AM, ul. Rewolucji 1905 r. 76 m 1, 90-223 Lodz, Poland
Pol Przegl Chir; 53(5):387-393 1981

The effectiveness of conventional and intraintestinal alimentation by means of a gastric tube was studied in 50 patients subjected to partial gastrectomy, including 5 for gastric carcinoma. The patients fed intraintestinally received Portagen nutrient mixture with large amounts of medium-chain triglycerides or the synthetic nutrient BSDa enriched with amino acids. The weight loss of the patients fed intraintestinally was significantly lower and the serum protein significantly higher 7 days after surgery than in the patients fed in the conventional manner. (10 Refs) (In POL)

46. THE CELESTIN TUBE IN NEOPLASTIC OBSTRUCTION OF THE ESOPHAGUS.

Ziskind Z, Yellin A, Lieberman Y
Dept. Thoracic Surgery, Sackler Sch. Medicine, Tel Aviv, Israel
Harefuah; 101(3):51-53,92 1981

Malignancies of the esophagus are frequently inoperative and lead to obstruction of the alimentary tract, malnutrition, and aspiration pneumonias. Celestin tubes were implanted to bypass complete or partial obstructions in 11 patients (5 males, 6 females, 53-94 yr old, av age 74 yr) with esophageal neoplasm. Seven of the patients had primary esophageal neoplasms; five were squamous and two were adenocarcinoma. Three patients suffered from invasive tumors of the lung or breast, and one had an esophageal metastasis from a primary rectal carcinoma. The technique for implanting the two-part celestin tube under general anesthesia is described. In most cases the pilot basic part of the tube was passed from above and connected to the lower part of the tube passed upward from the stomach. The tube was then manipulated so that the funnel rested just above the obstruction. The lower end was then sutured to the posterior wall of the stomach. One patient died intra-operatively and two suffered correctable complications. Advantages the celestin tube has over other methods of managing esophageal obstruction in terminally ill patients are discussed. The patients survived 14 wk, and all experienced an improved quality of life. (16 Refs) (In HEB)

47. PALLIATIVE INTUBATION OF BILIARY TRACT CANCERS BY TRANSHEPATIC TRANSTUMORAL U-TUBE DRAIN.

Ronsse H, Breil P, Richer M, Fekete F
Service de chirurgie digestive, Hopital Beaujon, 100, bd du General-Leclere, 92118 Clichy, France
Ann Chir; 35(10):829-834 1981

Six patients with non resectable carcinoma of the extrahepatic biliary tract were treated with U-tube drainage. Patient age ranged from 48-79 yr with an av age of 64 yr; he was diagnosed preoperatively with trans-hepatic cholangiography. Surgical mortality was 16% with the death of one patient 45 days postsurgery because of septicemia of a biliary origin associated with poor drainage. There were no other complications. Among the five other patients, the only febrile episodes were due to control cholangiographies. Three patients died 6, 13, and 14 mo following drainage establishment. The first patient in the series died at 13 mo in a metabolic coma associated with major electrolyte disorders. Autopsy revealed the absence of cancer evolution related to the surgical drainage establishment. Autopsy revealed the absence of cancer evolution related to the surgical establishment of drainage. The other patients died from cancer evolution. Two patients were still alive at 16 and 24 mo follow-up. (21 Refs) (In FRE)

48. SURGICAL TECHNIQUE: CONTINUOUS TRANSHEPATIC DRAINAGE: A PALLIATIVE POSSIBILITY FOR ENTERAL BILIARY BY-PASS IN OBSTRUCTIVE PROCESSES.

Neugebauer W, Durst J, Bahr R
Chirurgische Universitatsklinik, Calwer Str. 7, D-7400 Tubingen, W. Germany
Zentralbl Chir; 106(19):1317-1322 1981

Thirty-two patients were treated for obstruction of the hepatic portal by installation of an continuous transhepatic drain. The cause of obstruction was infection by Echinococcus alveolaris (11 cases), carcinoma of the biliary tract (13 cases), primary hepatic cell carcinoma, (2 cases), or metastatic processes in the liver portal (6 cases). The procedure required a polyvinylchloride tube (16-18 on the Charriere scale) with the perforated section of the tip removed, curved scissors or Luer's pliers, a blunt, curved, flexible lancet for boring through the tumor and liver, a sharp lancet for piercing the small bowel and abdominal wall, and a coupler. The drainage tube was inserted through the liver, tumor, confluent hepatic and the small bowel. The free ends were passed through the abdominal wall and joined together, forming an continuous tube. Perforations in the part of the tube within the hepatic duct and small bowel allowed drainage of bile into the digestive tract. In cases where the confluent hepatic duct was obstructed by tumor, the drainage tube was inserted through both lobes of the liver. The method allowed cleansing of the drain to prevent incrustation and avoided accidental removal of the drain by peristalsis. Palliative effects in cancer patients were good, although survival time did not improve. (15 Refs) (In GER)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

49. PERNICIOUS ANEMIA AS A RISK FACTOR IN GASTRIC CANCER. THE EXTENT OF THE PROBLEM.

Eriksson S, Clase L, Moquist-Olsson I
Dept. Medicine and Pathology, Univ. Lund, Malmo General Hosp., Malmo, Sweden
Acta Med Scand; 210(6):481-484 1981

We have analyzed the prevalence of pernicious anemia (PA) in all patients with autopsy-verified gastric carcinoma (GC) registered during 1958-76 in a Swedish city, with one Department of Pathology serving approx 240,000 inhabitants and with a high autopsy frequency. The prevalence was compared to that in a reference group of 917 sex- and age-matched individuals without GC. PA was found in 19 persons, 2.1%, (7 males and 12 females) in the GC group and in 13 persons, 1.4%, (5 males and 8 females) in the reference group. This difference is not significant (p less than 0.15). After exclusion of individuals with PA known for less than 5 yr before death, the corresponding figures were 16 in the GC group against 8 in the control group. This difference is significant (p less than 0.05). Regarding individuals with a diagnosis of PA for greater than 10 or greater than 15 yr, the prevalence was twice as high in the GC as in the reference group. The differences were again insignificant (p less than 0.10) . PA as a risk factors for the development of GC has been overestimated, probably due to inadequate reference groups. Only 2% of all GCs are associated with PA. Large-scale preventive search for GC in PA patients is thus unjustified. (Author abstract) (10 Refs)

50. GASTRIC CANCER AFTER VAGOTOMY AND EXCISION FOR GASTRIC ULCER.

Haukland H, Johnson JA
Dept. Surgery, Inst. Clinical Medicine, Univ. Tromso, Tromso, Norway
Eur Surg Res; 13(5):371-375 1981

A follow-up examination of 152 patients with gastric ulcer treated with vagotomy, ulcerectomy and drainage showed that 4 of the patients manifested gastric cancer 5-7 years after the operation. A simultaneous follow-up of a parallel series of 269 patients with duodenal or pyloric ulcer treated with vagotomy and drainage in the same surgical unit did not reveal a single case of gastric cancer development. The observations seem to indicate that there is a greater risk of cancer development in the ulcerectomized and vagotomized stomach. (Author abstract) (13 Refs)

51. PREDISPOSITION OF THE RESECTED STOMACH FOR MALIGNANCY.

Rakovec S, Kovic M
Medical Center, Univ. Surgical Hosp., Ljubljana, Yugoslavia
World J Surg; 5(5):725-727 1981

The cases of 62 patients treated for carcinoma of the gastric stump following resection for benign causes are described. The group represented 4.6% of all stomach cancer patients treated and 2.6% of all those who underwent partial resection for peptic disease. Females were only 3/62 of the patients. The av history of complaints lasted 3.5 mo; most frequent presenting symptoms were anemia, weight loss, dysphagia, epigastral pain, aversion to food, and weakness. Carcinomas were located in the anastomosis (60%), at the cardia of the stomach (36%), or elsewhere on the gastric stump. Adenocarcinoma was the most frequent type of carcinoma (61%). Survival rate after resection averaged 14 mo. The high percentage of inoperable patients indicates that diagnosis was too late. Avoidance of gastric resection in duodenal ulcer cases, and radiological and gastroscopical examination of the residual stomach, are recommended. (13 Refs)

52. LIVER MALIGNANCY AFTER PARENTERAL NUTRITION.

Vileisis RA, Sorensen K, Gonzalez-Crussi F, Hunt CE
(c/o Hunt) Div. Neonatology, Children's Memorial Hosp., 2300 Children's Plaza, Chicago, IL, 60614
J Pediatr; 100(1):88-90 1982

Liver dysfunction is a well-recognized complication of long-term parenteral nutrition. The cholestatic condition has been assumed to be benign because of the reversibility of liver function abnormalities once parenteral nutrition has been discontinued and oral feedings established. However, persistent hepatic fibrosis or cirrhosis, or both, have been demonstrated in biopsies of patients with cholestatic jaundice secondary to parenteral nutrition, and parenteral nutrition-associated cholestatic jaundice has recently been implicated as the cause of significantly morbidity. To illustrate a new complication of parenteral nutrition-associated liver dysfunction, we now report a preterm infant with parenteral nutrition-associated cholestatic jaundice and resultant biliary cirrhosis in whom fatal hepatocellular carcinoma occurred at age 26 months. (Author abstract) (11 Refs)

53. ANDROGEN-ASSOCIATED HEPATOMA IN A HEMODIALYSIS PATIENT.

Zevin D, Turani H, Cohen A, Levi J
(c/o Levi) Dept. Nephrology, Hasharon Hosp., Petah-Tiqva, Israel
Nephron; 29(5/6):274-276 1981

A 68-yr-old man with recurrent nephrolithiasis and subsequent unilateral nephrectomy was treated with oxymetholone (50 mg/dose, po) for 18 mo during intermittent hemodialysis. The treatment was then changed to nandrolone decanoate (100 mg/wk, im) which provided better control of the patient's anemia. The patient developed hepatocellular carcinoma 20 mo after oxymetholone was stopped and died approx 3 wk after diagnosis. No extrahepatic metastases were found at autopsy. (20 Refs)

54. THE EFFECT OF CHRONIC HABITUAL ALCOHOL INTAKE ON THE DEVELOPMENT OF LIVER CIRRHOSIS AND HEPATOCELLULAR CARCINOMA: RELATION TO HEPATITIS B SURFACE ANTIGEN CARRIAGE.

Ohnishi K, Iida S, Iwama S, Goto N, Nomura F, Takashi M, Mishima A, Kono K, Kimura K, Musha H, Kotota K, Okuda K
First Dept. Medicine, Chiba Univ. Hosp., 1-8-1 Inohana-cho, Ciba City, Chiba (280), Japan
Cancer; 49(4):672-677 1982

To study the effects of habitual alcohol intake on the latency period for the development of liver cirrhosis and hepatocellular carcinoma (HCC), 158 patients with cirrhosis and 79 with HCC were analyzed with respect to age at the time of diagnosis. They were classified into four groups based on hepatitis B surface antigen (HBsAg) in serum, and the history of intake of more than one small bottle of Japanese 'sake' or an equivalent per day for more than 10 yr. The av age of HBsAg positive male cirrhotics with a drinking habit ($n = 10$) was 38.8 yr, 10.5 yr younger than that of those without a drinking habit (n = 8) (p less than 0.05). The av age of HBsAg negative cirrhotics with a drinking habit (n = 97) was 47.9 yr, 8 yr younger than that of those not drinking (n = 36) (p less than 0.001). There was no significant difference in the laboratory data between these groups. The av age of the HBsAg positive HCC patients with a drinking habit (n = 20) was 48.9 yr, 9 yr younger than that of those without a drinking habit (n = 12) (p less than 0.05). The av age of HBsAg negative male HCC cases with habitual intake of more than 126 ml of ethanol per day was 51.0 yr (n = 8), 10 yr younger than that of nondrinking male HCC cases (n = 11) (p less than 0.05). These data suggest that habitual alcohol intake may promote the development of liver cirrhosis and HCC, especially in HBs Ag carriers. (Author abstract) (29 Refs)

55. HEPATOCELLULAR CARCINOMA ARISING IN NONCIRRHOTIC AND HIGHLY CIRRHOTIC LIVERS: A COMPARATIVE STUDY OF HISTOPATHOLOGY AND FREQUENCY OF HEPATITIS B MARKERS.

Okuda K, Nakashima T, Sakamoto K, Ikari T, Hidaka H, Kubo Y, Sakuma K, Motoike Y, Okuda H, Obata H
Dept. Medicine, Chiba Univ. Hosp., Chiba, Japan
Cancer; 49(3):450-455 1982

Hepatocellular carcinoma (HCC) associated with cirrhosis and HCC developing in a noncirrhotic liver may have differing pathogeneses. To study this possibility, 426 autopsied cases of HCC were investigated. Of these, 45 livers were not cirrhotic, 50 were highly cirrhotic (liver wt less than 99 g), and the remaining 331 were cirrhotic but not so highly. The av age was significantly older in the highly cirrhotic group, suggesting a longer premalignant period of chronic liver disease. The liver wt in the noncirrhotic group was about 3.5 times that in the highly cirrhotic group. Hepatitis B surface antigen was positive in serum in only 9.3% and in liver tissue in 10% in the noncirrhotic cases, the positivity rate being much lower compared with other groups (p less than 0.005-0.01), yet antibody to HB core was positive in 90%. The antibody titers were low, however, indicating that these noncirrhotic patients had in the past had HB virus (HBV) infection with no residual chronic B hepatitis. Analysis of the grades of anaplasia of cancer tissue demonstrated an inverse correlation between the degree of fibrosis and grade of anaplasia, i.e., the more advanced the fibrosis, the less anaplastic the cancer. These data suggest that HCC arising in highly cirrhotic livers and in noncirrhotic livers have different pathogenetic backgrounds, and that HBV infection, even though transient, has a certain role in hepatocarcinogenesis. The generally held conjecture that HCC in a noncirrhotic liver is caused by nonviral carcinogens and HCC arising on the ground of cirrhosis is due to HBV seems untenable in such a simple concept. (Author abstract) (27 Refs)

56. MEMBRANOUS OBSTRUCTION OF THE INFERIOR VENA CAVA: ETIOLOGY AND RELATION TO HEPATOCELLULAR CARCINOMA.

Okuda K
Dept. Medicine, Chiba Univ. Sch. Medicine, Chiba, Japan
Gastroenterology; 82(2):376-379 1982

Membranous obstruction of the inferior vena cava (MOVC) and relations to hepatocellular carcinoma (HCC) are reviewed. MOVC appears to occur more frequently in developing areas of the world. The relationship between MOVC and (HCC) is poorly understood and may represent multifactorial oncogenetic processes. In a recently reported series, incidence of 22.2% hepatitis B surface antigen (HBsAg) in patients with MOVC in South Africa was higher than in healthy persons (8.7%), but lower than that in patients with HCC (33.7%). This may suggest that hepatitis B virus infection is not the only factor in hepatocarcinogenesis, and that high incidence of HCC patients with MOVC may be due to the long duration of chronic liver damage in MOVC. HCC has been described also with a wide variety of chronic liver diseases including hemochromatosis, alpha1-antitrypsin deficiency, schistosomiasis, clonorchiasis, and Thorotrast liver disease. Since the incidence of HBsAg carrier state is much higher in blacks of South Africa, but the incidence of HCC is similar to that of Japan, perhaps blacks are exposed to lower concentrations of chemical carcinogens. (30 Refs)

57. NODULAR REGENERATIVE HYPERPLASIA OF THE LIVER IN A PATIENT WITH DIABETES MELLITUS.

Thung SN, Gerber MA, Bodenheimer HC
Dept. Pathology, Mount Sinai Sch. Medicine, One Gustave L. Levy Place, New York, NY, 10029
Cancer; 49(3):543-546 1982

Diffuse nodular regenerative hyperplasia of the liver (NRH) is a rare cause of portal hypertension. It is characterized by diffuse nodularity of the liver without cirrhosis. NRH is usually associated with other diseases, most commonly Felty's syndrome. A case is reported in which maturity-onset diabetes mellitus was accompanied by elevated serum insulin levels. Hepatotrophic hormones such as insulin or glucagon may play a role in the development of some cases of NRH. (Author abstract) (24 Refs)

58. INCREASING FREQUENCY OF ESOPHAGEAL CANCER AMONG BLACK MALE VETERANS.

Rogers EL, Goldkind L, Goldkind SF
Veterans Admin. Medical Center, 3900 Loch Raven Blvd., Baltimore, MD, 21218
Cancer; 49(3):610-617 1982

Between the years of 1975 and 1979, the frequency of diagnosis of esophageal cancer has doubled at the Baltimore VA Medical Center due to a rapid increase of esophageal cancer among black males. This increase was not related to increased yearly hospital admission rates, percentage of black patients admitted yearly, or increased use of the hospital for chronic disease processes. Detailed chart review and comparison with consecutive medical admissions as controls revealed heavy alcohol use and urbanization to be risk factors experienced more frequently by black than white male veterans. A serious question needs to be quickly answered: Does the rise of esophageal cancer at the Baltimore VAMC reflect a rise among black males only in Baltimore or does it reflect a rise nationwide among black males with a history of previous employment in the armed forces? (Author abstract) (19 Refs)

59. SPATIAL PATTERN OF PRIMARY LIVER CANCER COMPARED TO THAT OF OESOPHAGEAL CANCER IN GOLDMINERS FROM TRANSKEI, 1964-1979.

McGlashan ND, Harington JS, Bradshaw E
(c/o Harington) Cancer Res. Dept., National Cancer Association, P.O. Box 2000, Johannesburg 2000, South Africa
S Afr J Sci; 77(10):471-473 1981

The spatial pattern of primary liver cancer was compared to that of esophageal cancer in goldminers from Transkei; detailed geographic analysis of places of recruitment for cases of esophageal cancer revealed a significant similarity with the spatial pattern of Transkei residents, both male and female, who had not been absent while migrant laborers. (5 Refs)

60. NATIONWIDE SURVEY OF MAJOR LIVER DISEASES IN THAILAND ANALYSIS OF 3,305 BIOPSIES AS TO YEAR-END 1978.

Bunyaratvej S, Meenakanit V, Tantachamrun T, Srinawat P, Susilaworn P, Chongchitnan N
Dept. Pathology, Faculty Medicine, Ramathibodi Hosp., Mahidol Univ., Bangkok 4, Thailand
J Med Assoc Thai; 64(9):432-439 1981

Liver cancer, cirrhoses, and inflammatory diseases were surveyed in different regions of Thailand. Liver cancer was more prevalent in the northeast (73.4% of all liver diseases) and in the north (Khonkaen) (42.5%) than in the south (36.8) and central (26.0%) areas. Hepatocellular carcinoma (HPC) was the most common liver cancer in the north (29.5), and cholangiocarcinoma (CC) was most frequently found in the northeast (46.2%). Metastatic carcinoma occurred more in the south (9.4%). HPC affected men 5x more than women, and men also were affected with CC twice as often as women. HPC rate reached a peak in the fifth decade and descended thereafter. Acute viral hepatitis comprised 2.1-4.3% of liver diseases in the different areas, chronic hepatitis 2.1-8.5%. While a high association between CC and opisthorchiasis has been reported, no significant association of viral hepatitis to opisthorchiasis associated CC could be found. Parasitic infections associated with the consumption of raw fish and high levels of nitrates and nitrites in food and surface waterss are discussed as factors in the regional patterns of liver disease. (29 Refs)

61. NITRITE AND NITROSAMINES IN GASTRIC JUICE: RISK FACTORS FOR GASTRIC CANCER?

Schlag P, Bockler R, Peter M
Dept. Surgery, Univ. Ulm, Steinhovelstr. 9, D-7900 Ulm, W. Germany
Scand J Gastroenterol; 17(1):145-150 1982

Nitrite and nitrosamine concentrations have been measured in 108 patients undergoing gastroscopy as a part of routine gastrointestinal investigations. The nitrite and nitrosamine values of 20 patients with duodenal and 11 patients with benign gastric ulcer were within the range of the values of 26 normal subjects. The nitrite and nitrosamine concentrations in 32 patients with inflammatory changes of the gastric mucosa were slightly higher than normal values and correlated with the progressive degrees of the severity. In 19 patients with atrophic gastritis the concentrations of nitrite and nitrosamines were significantly elevated in comparison with those of all other groups. Our data suggest a relationship between the constant exposure of an already damaged gastric mucosa to N-nitroso compounds and the known high incidence of gastric cancer in atrophic gastritis. (Author abstract) (11 Refs)

62. COFFEE CONSUMPTION AND PANCREATIC CANCER: TEMPORAL AND SPATIAL CORRELATION.

Benarde MA, Weiss W
Dept. Community Medicine and Environmental Health, Hahnemann Univ. Health Sciences, Philadelphia, PA, 19102
Br Med J; 284(6313):400-402 1982

An examination of available data on per caput consumption of coffee and pancreatic cancer mortality in the United States since 1950 shows a temporal association. A rise and fall in coffee consumption was followed by a rise and fall in the incidence of pancreatic cancer with roughly a 10-yr lag. Nevertheless, there were inconsistencies in this relationship by sex and race. An unimpressive spatial relationship was also found between the consumption of coffee and pancreatic cancer mortality in 13 countries. While this relationship suggests an association, major inconsistencies cast doubt on the possibilities that it is one of cause and effect. This may be due to confounding, particularly by cigarette smoking. The association between cigarette smoking and cancer of the pancreas is much more consistent with a casual relationship. (Author abstract) (25 Refs)

63. SMOKING AS RISK FACTOR FOR DIFFERENT FORMS OF CANCER AMONG 26,000 MEN AND WOMEN IN NORWAY. MATCHING OF THE GROUP OF SMOKERS WITH THE CANCER REGISTRY OVER A 12-YEAR PERIOD.

Lund E, Zeiner-Henriksen T
Kreftregisteret, Montebello, Oslo 3, Norway
Tidsskr Nor Laegeforen; 101(34-36):1937-1940 1981

The cancer risk due to smoking was studied among 11,979 men and 13,998 women born between 1895 and 1929 on the basis of data in the Norwegian Cancer Registry for the period 1966-1977. A total of 1,815 cases of cancer were registered for this group during the studied period. Nonsmokers accounted for 22.4% among men and 76.5% among women, ex-smokers for 21.7% and 4.2%, current smokers for 55.4% and 19.1%, and the smoking habits of 0.5% of the men and of 0.2% of the women are unknown. The age-adjusted relative risk (relative to nonsmokers) per 1,000 men was found to be 4.8 for lung cancer and 2.3 for cancer of the urinary bladder and urethra. For women, the relative risk was found to be 1.9 for lung cancer, 1.5 for cancer of the urinary bladder and urethra and 1.3% for cancer of the uterine cervix. The relative risk for all smokers was found to be 1.4 for lip cancer (men), 7.5 for stomach cancer (men), 4.4 for colon cancer (men), 0.9 for larynx cancer, 9.2 (men) and 1.7 (women) for lung cancer, 3.3 for cancer of the uterine cervix, 12.4 for prostate cancer, 3.7 (men) and 1.2 (women) for cancer of the urinary bladder and urethra, 4.8 (men) and 3.4 (women) for lymphoma and leukemia. Significant difference between smokers and nonsmokers was found with respect to laryngeal cancer (men), esophageal cancer (men), cancer of the liver and bile ducts (women) and carcinoma of the uterine cervix as well. The risk of cancer of the upper respiratory passages are higher for pipe smokers than for cigarette smokers, while cigarette smokers had higher risk of lung cancer than pipe smokers. The cancer risk was found to be lower among ex-smokers than current smokers, and it increased with cigarette consumption. (17 Refs) (In NOR)

SELECTED PRE-CLINICAL STUDIES

64. ESTABLISHMENT OF CELL LINES DERIVED FROM SQUAMOUS CELL CARCINOMA OF THE ESOPHAGUS IN HUMANS AND RATS.

Iizuka T, Ichimura S
Dept. Surgery, Natl. Cancer Center Hosp., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo 104, Japan
Jpn J Clin Oncol; 11(3):487-493 1981

Two esophageal carcinoma cell lines (TH and TS) were established in DM-160 medium containing 20% fetal bovine serum, and their cytology, chromosomes, and electrophoretic lactate dehydrogenase (LDH) isozyme patterns were studied.

Three cell lines (R-1, R-2, R-3) from Donryu rats whose esophageal tumors had been induced by N-amyl-N-methyl-nitrosamine were also established, and subjected to the same studies. The modal chromosome numbers were as follows: TH, 46; TS, 59; R-1, 68; R-2, 41; R-3, 73. The LDH isozyme pattern studied in the TH cell line indicated a tumor pattern. Human tumor cells were sc transplanted to BALB/C nude mice; rat cell lines were transplanted to both mice and Donryu rats. All cell transplants to nude mice resulted in tumors, but transplants in syngeneic Donryu rats did not develop into tumors. (8 Refs)

65. THE EFFECT OF TETRANDRINE ON THE GROWTH OF ECA 109 CELL LINE IN VITRO.

Wang R, Pan Q

Cancer Inst., Chinese Acad. Medical Sciences, Beijing, People's Republic of China

Zhonghua Zhongliu Zazhi; 3(2):86-88 1981

Tetrandrine an alkaloid isolated from Stephania tetrandra S Moore, which has been shown to have antimicrobial, antiinflammatory, analgesic, hypotensive and antitumor activities. Its effects on cell proliferation are described for long-term monolayer cultures of human esophageal cancer epithelial cell line (ECa 109) and the cloned line (Eca 109-C3). Tetrandrine caused complete detachment of ECa 109 cells from culture vessel after 48 hr of treatment at 75 ug/ml, and it caused most nucleoli of ECa 109-C3 cells to appear blurred at 10 ug/ml. Its effects on the mitotic index of both lines were essentially the same. At 7.5-10 ug/ml, tetrandrine inhibited mitotic index by 30-70%, with effects at 48 hr slightly stronger than those at 24 hr. At 1 ug/ml its effects on mitotic activities were only minimal. After exposure of ECa 109-C3 cells to 10 ug/ml tetrandrine for 5 days the growth was inhibited by 37% as compared to the control. Tetrandrine at 7.5-10 ug/ml also inhibited 3H-TdR incorporation in both cell lines by about 25%. Cell division was not affected in cells that had already synthesized DNA. (7 Refs) (I n CHI)

66. SECRETORY COMPONENT (SC) PRODUCING HUMAN GASTRIC CANCER: AN IMMUNOELECTRON-MICROSCOPIC STUDY OF CANCER CELLS TRANSPLANTED TO NUDE MICE AND ATHYMIC RATS.

Tokuda Y

Dept. Surgery, Tokai Univ. Sch. Medicine, Isehara-shi, Kanagawa Pref 259-11, Japan

Gan No Rinsho; 27(13):1605-1612 1981

Human gastric cancer (HGC) cells were transplanted into nude mice and athymic rats. Localization of secretory component (SC) by a peroxidase-labeled antibody method showed SC in rough endoplasmic reticulum, perinuclear space, Golgi apparatus, baso-lateral plasma membrane, and microvilli beyond the intercellular tight junctions. Free SC occurred in interstitial spaces and surrounding connective tissue. The value of nude mice and athymic rats in the study of HGC using SC as a marker is indicated. (26 Refs) (In JPN)

67. SELECTING BINDING AND COMPLEMENT-MEDIATED LYSIS OF HUMAN HEPATOMA CELLS (PLC/PRF/5) IN CULTURE BY MONOCLONAL ANTIBODIES TO HEPATITIS B SURFACE ANTIGEN.

Shouval D, Wands JR, Zurawski VR, Isselbacher KJ, Shafritz DA
(c/o Shafritz) Dept. Medicine and Cell Biology, Liver Res. Center, Albert Einstein Coll. Medicine, Bronx, NY, 10461
Proc Natl Acad Sci USA; 79(2):650-654 1982

High-affinity 125I-labeled monoclonal antibodies to hepatitis B virus surface antigen (HBsAg) bind to a human hepatocellular carcinoma cell line, PLC/PRF/5, which synthesizes and secretes HBsAg. These monoclonal antibodies of the IgG1, IgG2a, and IgM isotypes are directed against different antigenic determinants on HBsAg and, in the presence of complement, both anti-HBs IgG2a and IgM, but not anti-HBs IgG1, lyse PLC/PFR/5 cells in culture. Although there is a low level of anti-HBs binding (especially with anti-HBs IgM) to human hepatoma cell lines which do not synthesize HBsAg (SK-Hep 1 and Mahlavu cells), this interaction does not lead to complement-mediated cell lysis and is thought to be nonspecific. Minimal binding of 125I-labeled anti-influenza HA antigen IgM binding to PLC/PRF/5 cells was also detected, but this likewise did not lead to complement-mediated cell lysis. These results indicate that a human hepatocellular carcinoma cell line, persistently infected with hepatitis B virus, can be recognized and lysed by monoclonal antibodies directed against specific determinants of HBsAg. Monoclonal antibodies to this viral envelope protein may prove to be useful immunodiagnostic and immunotherapeutic agents when such viral epitopes are expressed on the surface of infected cells. (Author abstract) (33 Refs)

68. HUMAN PANCREATIC ADENOCARCINOMA: IN VITRO AND IN VIVO MORPHOLOGY OF A NEW TUMOR LINE ESTABLISHED FROM ASCITES.

Chen WH, Horoszewicz JS, Leong SS, Shimano T, Penetrante R, Sanders WH, Berjian R, Douglass HO, Martin EW, Chu TM
(c/o Chu), Roswell Park Memorial Inst., 666 Elm St., Buffalo, NY, 14263
In Vitro; 18(1):24-34 1982

A human pancreatic tumor cell line has been established from the ascites of a patient with histopathologically confirmed adenocarcinoma of the head of the pancreas and maintained for more than 12 mo in the laboratory. Epithelioid tumor cell colonies, which resulted from primary tissue cultures of the ascitic cell component, were mechanically isolated by needle micromanipulation. Tumorigenicity was proven in athymic nude mice. Morphologically the pancreatic tumor epithelial cells grew to confluency with moderately tight adhesion to the culture plastic surface and with free-floating cells in the medium. Upon re-establishment of the tumoral xenograft in tissue culture, the epithelial cells retained their original morphology. Histologically the tumor grown in nude mice exhibited prototypic characteristics of the primary adenocarcinoma in the patient, producing abundant mucin and displaying a broad spectrum of glandular differentiation, which ranged from well to poorly differentiated adenocarcinomas with occasionally localized lymphocytic infiltrations. Furthermore, the tumor expressed carcinoembryonic antigen and human pancreas cancer associated antigen. This tumor line, designated AsPC-1, has been cultured for at least 10 passages in vitro and 3 in vivo. It represents a new model for human pancreatic cancer. (Author abstract) (27 Refs)

☆ U. S. GOVERNMENT PRINTING OFFICE : 1982—361-847/120

AUTHOR INDEX WITH CITATION NUMBERS

Akagi G 21
Alexandre JH 42
Alhadeff JA 12
Araki E 11
Arndt R 22
Bacourt F 15
Bahr R 48
Baillet J 42
Ball TJ 3
Bamberg M 36
Banai J 2
Banks LM 5
Basin C 15
Bayley AC 20
Becker WM 22
Benarde MA 62
Berjian R 68
Binkley WB 24
Bockler R 61
Bodenheimer HC 57
Bojanowicz K 45
Bottomley R 37
Boucherie JC 42
Bowers T 33
Bradshaw E 59
Bray J 30
Breil P 47
Brenner U 44
Bruckner HW 27
Bukowski R 37
Bunyaratvej S 60
Bydder GM 5
Cain GD 1
Charnsangavej C 33
Chen T 37
Chen W 7
Chen WH 68
Chongchitnan N 60
Christiansen J 32
Chu TM 68
Chuang VP 33
Ciesielski L 45
Clarke GJ 5
Clase L 49
Classen M 22
Cohen A 53
Colliard M 15
Cronenwett JL 35
Csikos M 6
Currie VE 39
Davignon JP 39
Dienst C 44
Douglass HO 68
Doyle FH 5
Duprey J 15
Durst J 48
Dusel FJ 30
Eckhauser FE 35
Edwards BK 43
Eriksson S 49
Eros A 2
Fekete F 47
Filippa DA 41
Fleming TR 39
Franc B 15
Freeny PC 3
Frija G 15
Fujita Y 26
Fujita Y 29
Fukumoto Y 38
Furusawa M 28
Furuya K 21
Gerber MA 57
Ghosh PK 19
Gilderdale DJ 5
Giraudet P 15
Goldblum RM 23
Goldkind L 58
Goldkind SF 58
Goldman AS 23
Gomez LG 23
Gonzalez-Crussi 52
Gonzalez-Vitale 23
Goto N 54
Graham DY 1
Gu X 7
Gyorkey F 1
Halse C 32
Hamann A 22
Hanssen KF 14
Harada T 38
Harington JS 59
Haruyama K 31
Haukland H 50
Haws CC 40
Heberer G 16
Heding LG 14
Hidaka H 55
Hjortrup A 32
Holzinger KT 12
Horoszewicz JS 68
Horvath O 6
Huang GJ 9
Hunt CE 52
Ichimura S 64
Iida S 54
Iizuka T 64
Ikari T 55
Ikeda M 4
Imre J 6
Inokuchi K 4
Isselbacher KJ 67
Ito I 34
Iwama S 54
Jessen K 22
Jimi S 28
Johnson JA 50
Jones AE 43
Jones SE 39
Karas M 41
Kasuga M 29
Kemeny MM 43
Kimura K 54
Kirkegaard P 32
Kitagawa N 26
Klaff LJ 18
Koch R 39
Kodama T 38
Kojima O 26
Kono K 54
Kotota K 54
Kovic M 51
Kubo Y 55
Kun M 2
Kvols LK 39
Lavin PT 27
Lee BJ 41
Leong SS 68
Levi J 53
Li G 7
Lieberman PH 41
Lieberman Y 46
Lindenauer SM 35
Livstone EM 27
Lovelace CE 20
Luke M 32
Lund E 63
Maclean GD 30
Majima S 26
Majima S 29
Marks IN 18
Martin EW 68
Mashiba H 28
Matsuda T 34
Matsumoto S 31
Matsunaga K 28
McDonnell MJ 5
McGlashan ND 59
McPherson TA 30
Meenakanit V 60
Miao Y 7
Mihas AA 25
Mihas TA 25
Mishima A 54
Moertel CG 39
Moquist-Olsson 49
Morand L 42
Motoike Y 55
Muller JM 44
Musha H 54
Nakashima T 55
Neugebauer W 48
Nisce L 41
Nishimura H 38
Nishioka B 26
Nishioka B 29
Nishioka M 38
Njapau H 20
Noda K 38
Nomura F 54
Nomura Y 28
Obata H 55
Ogasahara K 13
Oh A 26
Ohnishi K 54
Okamoto A 34
Okita K 38
Okuda H 55

Okuda K 54
Okuda K 55
Okuda K 56
Okudaira Y 4
Onodera T 34
Otsuka H 21
Paillard J 42
Pan Q 65
Pascal JP 17
Pasmore T 5
Patterson M 23
Penetrante R 68
Pennock JM 5
Peter M 61
Petri A 6
Petri I 6
Pichlmaier H 44
Plainfosse MC 42
Plaxe SC 27
Plumley TF 3
Pradayrol L 17
Pradere B 17
Price SK 18
Prinseau J 15
Rakovec S 51
Richer M 47
Rogers EL 58
Rohrmann CA 3
Ronsse H 47
Rubin J 39
Saito H 31
Sakamoto K 55
Sakita M 29
Sakuma K 55
Salter LF 20
Sanders WH 68
Sarna G 39
Scherer E 36
Schlag P 61
Schmiegel WH 22
Schrohenloher R 25
Schwartz JT 1
Seo IS 24
Shafritz DA 67
Shawker T 43
Shigeta K 38
Shimano T 68
Shiu MH 41
Shouval D 67
Silverstein FE 3
Simson IW 8
Skinner JM 10
Smith TJ 43
Soehendra N 22
Soo CS 33
Sorensen K 52
Spelsberg F 16
Srinawat P 60
Steiner RE 5
Storch JA 27
Streffer C 36
Sugarbaker PH 43
Sugimachi K 4
Susilaworn P 60
Suzuki T 13
Szanto I 2
Takashi M 54
Takemoto T 38
Tamulevicius P 36
Tantachamrun T 60
Teichmann RK 16
Thiele HG 22
Thomas E 40
Thung SN 57
Tobe T 13
Tokuda Y 66
Torjesen PA 14
Turani H 53
Turcotte JG 35
Uehara Y 26
Ueo H 4
Vallee D 42
Vamosi NI 2
Vaughn C 37
Verghese A 40
Vermess M 43
Vileisis RA 52
Vinel JP 17
Voigt JJ 17
Volanakis JE 25
Wallace S 33
Walsh DB 35
Wands JR 67
Wang R 65
Warfel KA 24
Warner TF 24
Weers LA 18
Weiss W 62
Whitehead R 10
Wright JP 18
Yagawa K 28
Yamane T 29
Yellin A 46
Yoshinaga H 28
Yoshino K 31
Young CW 39
Young GO 18
Young IR 5
Zeiner-Henrikse 63
Zevin D 53
Ziskind Z 46
Zurawski VR 67

Keep Up with the Cancer Literature

Each Month You Can Receive Abstracts Covering Your Specialty Area

- This convenient service — called Auto SDI* — is as near as your nearest biomedical library. Discuss your research interests with the librarian who will design an appropriate search strategy.
- Abstracts of the latest published literature are searched automatically each month and those related to your interests are delivered to you on a regular basis.
- The abstracts you receive are selected from more than 4,000 monthly entries made into CANCERLIT — the extensive cancer literature data base of the National Cancer Institute.

Talk With Your Librarian About the Auto SDI Service TODAY.

---

*Auto SDI stands for Automatic Selective Dissemination of Information. It is a service provided to you, at minimal cost, by the International Cancer Research Data Bank (ICRDB) — a part of the National Cancer Institute.

INTERNATIONAL CANCER RESEARCH
DATA BANK

Compilation of Experimental Cancer Therapy Protocol Summaries

COMPLIMENTARY COPIES
NOW AVAILABLE

April 1982
Sixth Edition

CONTENT

This document contains summaries of over 1200 open experimental clinical cancer therapy protocols from countries around the world.

Open protocols are arranged in sections according to the specific type of cancer.

Protocols closed in 1981 are listed by title, number, and investigator in a separate section.

INDEXES

Tumor index
Agent/Modality index
Protocol identification number index

Mail to:
Compilation Request
ICRDB Program
National Cancer Institute
Westwood Building Room 10A18
Bethesda, Maryland 20205

Request for 1982 COMPILATION
(Print Clearly for use as mailing label)

Name: ____________________

Address: ____________________

____

City/State/Zip: ____________________

Country: ____________________

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

U.S. MAIL

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT 19/82/07

NCI/ICRDB/CT19 82/07

PB82-939407

ICRDB CANCERGRAM

INTERNATIONAL CANCER RESEARCH DATA BANK

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/07

JULY, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
SEP 9 1982
U.S. GOVT.
DEPOSITORY

DID YOU KNOW?? EACH CANCERLIT SEARCH THAT PROVIDES YOU WITH USEFUL DATA CAN BE STORED IN THE COMPUTER FOR AUTOMATIC SEARCHING OF NEW DATA EACH MONTH. ASK YOUR LIBRARIAN ABOUT AUTOMATIC SELECTIVE DISSEMINATION OF INFORMATION (AUTO-SDI).

In this issue:

- **SCREENING AND DIAGNOSIS**........................ **1-10**
- **PATHOLOGY, STAGING, AND PROGNOSIS**........................ **11-19**
- **BIOCHEMICAL AND IMMUNOLOGICAL MARKERS**........................ **20-34**
- **SURGICAL AND RADIATION THERAPY**..... **35-41**
- **SELECTED CLINICAL CORRELATIONS**...... **42-54**
- **REHABILITATION ASPECTS**........................ **55-59**
- **SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER**........................ **60-86**
- **SELECTED PRE-CLINICAL STUDIES**........... **87-96**

SCREENING AND DIAGNOSIS

1. TISSUE DIAGNOSIS FOR CARCINOMA OF THE PANCREAS AND PERIAMPULLARY STRUCTURES.

Lee YT
Dept. Surgery, Univ. Southern California Sch. Medicine, 1200 North State St., Los Angeles, CA, 90033

Cancer; 49(5):1035-1039 1982

In a county hospital, 217 patients were operated on for suspected cancer of the pancreas (186 patients) and periampullary structures (31 patients). The surgeons' philosophy was to avoid biopsy of the pancreas whenever possible, they often per-

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20. 3173/2:

formed radical resection based on clinical judgement alone (8% of the resections were chronic pancreatitis). Follow-up of the 65 patients who were presumed to have carcinoma without histologic proof showed the surgeon's clinical diagnosis to be incorrect in over 7% of the cases (max error-18%). Among patients with carcinoma of the pancreas, one third of the pancreatic biopsies missed the lesion (surgeon's sampling error). Frozen section examination of pancreatic biopsies in 63 patients showed false positive and negative rates of 3% and 4%, respectively (pathologist's sampling or interpretation errors). Two of 31 incisional biopsy of the pancreas resulted in pancreatic fistula; none of 24 needle biopsies did. Otherwise, biopsy of the pancreas did not influence mortality or morbidity after either resection or bypass procedures. (Author abstract) (24 Refs)

2. OUTCOME OF ENDOSCOPY AND BARIUM RADIOGRAPHY FOR ACUTE UPPER GASTROINTESTINAL BLEEDING: CONTROLLED TRIAL IN 1037 PATIENTS.

Dronfield MW, Langman MJ, Atkinson M, Balfour TW, Bell GD, Vellacott KD, Amar SS, Knapp DR
City Hosp., Nottingham NG5 1PB, England
Br Med J; 284(6315):545-548 1982

A study was conducted to find whether the higher diagnostic yield of endoscopy compared with barium radiography improves management or survival in patients with acute upper gastrointestinal bleeding. A total of 1,037 patients were entered into a randomized study comparing the outcomes after each investigation. The diagnostic yield in patients who underwent endoscopy was 73% (382 of 526 cases) and in those examined by radiography 55% (280 of 511 cases). A fifth of the patients in the radiology group and a tenth of those in the endoscopy group subsequently underwent the alternative investigation; in most cases, however, no additional diagnostic information was obtained. Operation rates were similar in the two groups, though patients in the endoscopy group were generally operated on sooner. Mortality rates were also similar in the two groups, though postoperative mortality was higher in the endoscopy group. Endoscopy may be a more accurate means of diagnosis than radiography, but it offers no short-term benefits in management. (Author abstract) (14 Refs)

3. ENDOSCOPIC INVESTIGATION OF CARCINOMA OF THE RESIDUAL STOMACH IN EIGHT PATIENTS.

Kawashima M, Kawamura S, Iida Y, Fuji T, Shimizu M, Ariyama S, Azuma M, Maetani N, Harima K, Nagatomi Y, Aibe T, Takemoto T, Tanabe M, Oshita Y, Sasayama T, Nagai K, Hayashi K
First Dept. Internal Medicine, Yamaguchi Univ. Sch. Medicine, Yamaguchi, Japan
Gastroenterol Endosc; 23(2):305-311 1981

Four patients (3 men, 1 woman; 62-79 yr old) who underwent surgery for gastric cancer of the residual stomach 10-22 yr after initial surgery for gastric cancers, and four patients (4 men; 42-62 yr old) who underwent surgery for gastric cancer of residual stomach 15-35 yr after initial surgery for benign disease of the stomach, were studied using endoscopy. In the patients who underwent surgery 2x for gastric cancer, the cancers were early stage in three and advanced in one. In the four patients who initially had benign diseases, the diseases were gastric ulcers in three and duodenal ulcer in one. Macroscopic classification of the cancers of the residual stomachs were Borrmann Type III in six cases and Borrmann Type IV in two; pathologically, all cases were adenocarcinoma. Ideally, endoscopic examination of the residual stomach was recommended about 1x/yr postoperatively for patients who have partial gastrectomy for benign gastric diseases. (9 Refs) (In JPN)

4. STUDY OF ATROPHIC GASTRIC MUCOSAL PATTERNS AND COMPLICATIONS OF GASTRIC CANCER IN PATIENTS WITH PERNICIOUS ANEMIA AND IN FAMILY MEMBERS OF THE PATIENTS.

Kurokawa K, Maruyama M, Watanabe S, Shiratori K, Ota Y, Suzuki H, Takemoto T
Dept. Gastroenterology, Tokyo Women's Medical Sch., Tokyo, Japan
Gastroenterol Endosc; 23(1):66-77 1981

Atrophic gastric mucosal patterns and complications of gastric cancer were studied using endoscopy in 20 patients with pernicious anemia (PA) and in family members when possible. Gastric cancer was found in 5/20 of the patients. One of the patients had metachronous double gastric cancer. Most (17/20) of the patients with PA had reversed atrophic-type pattern gastritis and 12/20 had reversed atrophic border pattern. Reversed atrophic-type pattern gastritis was observed in 4/11 family members of 7 patients with PA. Reversed atrophic-type pattern gastritis associated with PA was related to hypergastrinemia and was not related to positive perchloric acid (extract) or immunofluorescence antibody tests. All of the cancers were differentiated adenocarcinomas. Macroscopically, one cancer was Type I, four were Type IIa, and one was Borrmann Type II. Most of the cancers were multiple, protruding early stage carcinomas of the pyloric cavity. Incidence of cases of gastric cancer occurring in family members of patients with PA was compared with those occurring in family members of patients with hypergastrinemia, gastric cancer, and peptic ulcers using a proband method. Higher incidences of gastric cancer were observed in family members of patients with PA and hypergastrinemia than in those with gastric cancer or ulcers. (41 Refs) (In JPN)

5. SONOGRAPHY OF EXOPHYTIC GASTROINTESTINAL LEIOMYOSARCOMA.

Subramanyam BR, Balthazar EJ, Raghavendra BN, Madamba MR
Dept. Radiology, New York Univ. Medical Center, 560 First Ave., New York, NY, 10016
Gastrointest Radiol; 7(1):47-51 1982

Cases of five patients (all males, 55-74 yr old) with exophytic leiomyosarcoma are presented and sonographic features and the role of sonography in the preoperative evaluation are discussed. Sonography examination was performed in all cases as the initial procedure. Sonography revealed the solid nature of the tumors. Two masses were hyperechoic with echo-free areas, one was hyperechoic at the periphery with a central fluid level, and two were hypoechoic with echo-free areas. Necrosis with or without liquefaction was present in all cases. In one cases, a metastatic lesion in the liver was also demonstrated to be necrotic. Necrosis without liquefaction appeared as echo-free zones without enhanced transmission, and liquefaction necrosis appeared as fluid-containing spaces. With a methodological approach, sonography can suggest the exact origin of the intra-abdominal tumor, based on visualization of the normal visceral organs, demonstration of the anterior location of the tumor, and detection of intestinal lumen and/or intraluminal air in the immediate proximity of the tumor. Differentiation of leiomyoma by sonography is possible only when metastatic lesions are detected. Two cases had metastatic lesions in the omentum and liver. Definitive differentiation was histologic. Criteria highly suggestive of gastrointestinal leiomyosarcoma are a large, solid mass, anteriorly located, outside the solid viscera, necrosis, and intestinal lumen and/or air in close relation to the ip mass. (22 Refs)

6. ULTRASONOGRAPHIC EVALUATION OF THE GALLBLADDER.

Kane RA
Dept. Radiology, New England Deaconess Hosp., Boston, MA
CRC Crit Rev Diagn Imaging; 17(2):107-159 1982

In the past 5 yr, gallbladder sonography has developed into an extremely effective diagnostic tool, especially with the development of modern high-resolution equipment and real-time capabilities. Cholecystosonography can now offer the same diagnostic accuracy in the detection of gallstones as oral cholecystography. In addition, information may also be obtained readily concerning the status of the biliary tree. Ultrasonography also has an important role in the rapid assessment of acute cholecystitis and in the demonstration of complications ensuing from acute cholecystitis, such as the development of empyema, gangrene, or pericholecystic abscess. With high-resolution, real-time equipment, gallbladder sonography offers a rapid, inexpensive, and accurate means of assessing the gallbladder and may in fact replace oral cholecystography as the initial imaging method of choice for evaluation of gallbladder disease. (Author abstract) (55 Refs)

7. MYOCARDIAL SCINTIGRAPHY WITH TECHNETIUM-99M-DIPHOSPHONATE FOLLOWING RADIATION THERAPY OF THE THORACIC AREA.

Neumann G, Standke E, Gottschild D
Radiologische Klinik und Poliklinik des Bereiches Medizin, Karl-Marx-Universitat Leipzig, Liebigstr. 20, DDR-7010 Leipzig, E. Germany
Radiol Diagn (Berl); 22(5):690-696 1981

Myocardial scintigraphy (MS) with technetium-99m-diphosphonate (Tc-99m-DP) was performed on 30 patients receiving thoracic radiotherapy for Hodgkin's disease (14), esophageal carcinoma (4), bronchial carcinoma (3), mammary carcinoma (4), non-Hodgkin-lymphoma (2), thymoma (1), teratoma (1), or undifferentiated renal adenocarcinoma (1). MS was performed approx 2 hr after iv injection of 15 mCi Tc-99m-DP. Anterior, left anterior oblique, and left lateral views were obtained from each patient. Definitely positive findings of myocardial infarction were obtained from four patients, and questionably positive findings were obtained from three patients. The patients with definitely positive findings had received radiation doses of 1.3-16 Gray. Two of the patients with questionable findings had received radiation doses of 8 or 10 Gray. Results indicate that MS with Tc-99m-DP is capable of detecting fresh myocardial cell lesions, particularly those resulting from radiotherapy, and is independent of functional disorders. The small number of patients with detectable lesions indicates that myocardial damage is not a generalized effect of thoracic irradiation, but that radiation may act with other unknown factors to produce such damage. (8 Refs) (In GER)

8. NUCLEAR MAGNETIC RESONANCE IMAGING OF THE PANCREAS.

Smith FW, Reid A, Hutchison JM, Mallard JR
Div. Nuclear Medicine, Univ. Aberdeen, Foresterhill, Aberdeen AB9 2ZB, Scotland
Radiology; 142(3):677-680 1982

Nuclear magnetic resonance (NMR) images were obtained from 12 patients with pancreatic disease, and from 40 patients in a control group. Correlation of the images with ultrasound examinations and with laparotomy in five cases indicates that NMR is accurate in the demonstration of pancreatic pathology. Though the images bear close similarity to those obtained by conventional computed tomography (CT), further investigations are needed to delineate the true accuracy of NMR. (Author abstract) (13 Refs)

9. SIMPLIFIED DIAGNOSTIC PROCEDURE FOR PANCREATIC CANCER.

Jacobson G, Hemmingsson A, Lindgren PG, Lonnerholm T, Lorelius LE, Nordgren CE
Akademiska sjukhuset, Uppsala, Sweden
Lakartidningen; 79(4):194-195 1982

Simplified procedure for the diagnosis of pancreatic cancer is proposed. Ultrasonography is the first step in patients with suspected pancreatic tumor. Ultrasonography is followed by sonographically guided biopsy for cytological examination. Endoscopic retrograde cholangiopancreaticography (ERCP) is performed, if the results of the ultrasonographic examination, with or without biopsy, are negative or uncertain. Once pancreatic carcinoma is diagnosed, operability is evaluated by mesenteric arteriography to determine the invasion of the arteria hepatica, arteria lienalis, vena mesenteric superior, vena lienalis or vena portae. Angiography is complemented by percutaneous transhepatic portography in some patients in whom it is difficult to evaluate the arteriographic findings. Radical surgery is performed only in the absence of invasion of these vessels. This diagnostic procedure was used successfully in about 30 patients with pancreatic cancer. It was possible to diagnose 2/3 of all cases of pancreatic cancer by the combination of ultrasonography and biopsy. Percutaneous transhepatic cholangiography was eliminated, because ERCP was found to have greater diagnostic effectiveness. (12 Refs) (In SWE)

10. ASSESSMENTS OF ERCP, US, CT, AND RI IN DIAGNOSIS OF PANCREATIC CANCER.

Kuno N, Kido C, Kasugai T, Matsuura A, Kurimoto K, Ito Y, Tanehiro K, Sugihara Y, Kano T
First Dept. Internal Medicine, Aichi Prefecture Cancer Center, Aichi, Japan
Gastroenterol Endosc; 23(2):264-273 1981

Diagnostic values of endoscopic retrograde cholangiopancreatography (ERCP), ultrasonography (US), computed tomography (CT), and radioisotopic imaging (RI) were compared in 22 patients with pancreatic cancer. According to surgical or autopsy findings, the carcinomas were shown to be in the pancreatic head in 13 patients and in the body and tail of the pancreas in 9. Results of the ERCP, US, CT, and RI were interpreted as correct, suspected cancer, or incorrect. Correct or suspected results were observed in 19/22 patients with ERCP, in 9/11 with US, in 15/18 with CT, and in 14/18 with RI. With respect to the location of carcinomas of the head of the pancreas, correct or suspected diagnoses were achieved most often with CT, followed in descending order by ERCP, US, and RI. With respect to the location of carcinomas of the body and tail of the pancreas, correct or suspected diagnoses were achieved most often with ERCP, followed in descending order by US, RI, and CT. Of the 22 patients, 4 had resectable tumors, and the 4 cases were correctly diagnosed with ERCP. ERCP was thought to be the best method to detect resectable tumors, but each of the four methods was thought to be useful for diagnosis of the presence or absence of cancer in patients with jaundice. Combined use of all four methods was thought to be necessary for definitive diagnosis of pancreatic cancer. (25 Refs) (In JPN)

PATHOLOGY, STAGING, AND PROGNOSIS

11. GASTRIC POLYPS.

Fabry TL, Frankel A, Waye JD
Annenberg 23-08, Mount Sinai Medical Center, 1 Gustave Levy Place, New York, NY, 10029
J Clin Gastroenterol; 4(1):23-27 1982

Data of 73 patients (43 females, 30 males; 20-93 yr old, av age 64) with gastric polyps diagnosed between 1973 and 1978 were reviewed. Eleven patients were asymptomatic. The most common symptoms were abdominal pain in 36 and gastrointestinal bleeding in 38. Polyps in the antrum caused more symptoms than those in the body or fundus. Most of the polyps were discovered with the barium meal; tissue diagnoses were obtained by endoscopy in 62 patients and by surgery in 11. Endoscopic polypectomy was performed in 49 patients and endoscopic biopsy in 13. Sessile polyps tended to be smaller while pedunculated polyps were larger in the fundus than in the body or antrum. Iatrogenic ulcers healed within 3-4 wk of endoscopy. Of 15 patients with multiple discrete polyps, 9 had adenomas and 6 multiple hamartomas. Of eight with gastric polyposis, six were adenomatous and two hamartomatous. One Brunner gland adenoma presented as a gastric polyp and two patients had normal gastric mucosa at the biopsy site. There were 10 associated malignancies: 1 with adenomatous polyps with carcinoma in the polyp, 4 in the stomach remote from the polyp, 2 in the colon associated with adenomatous gastric polyposis, and 1 in carcinoid polyps. Other gastric disorders were found in 13 patients, including colon polyps, previous subtotal gastrectomy, gastric ulcer, duodenal ulcer, esophageal disorders, cholecystitis, and pernicious anemia. Even after removal of gastric polyps, patients should be followed closely for development of gastric carcinoma. (20 Refs)

12. ADENOCARCINOMA OF THE STOMACH: AREAS OF FAILURE IN A RE-OPERATION SERIES (SECOND OR SYMPTOMATIC LOOK) CLINICOPATHOLOGIC CORRELATION AND IMPLICATIONS FOR ADJUVANT THERAPY.

Gunderson LL, Sosin H
Dept. Therapeutic Radiology, Mayo Clinic, Rochester, MN, 55901
Int J Radiat Oncol Biol Phys; 8(1):1-11 1982

One hundred and nine patients had single or multiple re-operations after initial operative procedures for adenocarcinoma of the stomach. All patients were at risk for failure after initial surgery for a minimum of 5 yr, most for 10 yr. A diagnosis of recurrent and/or metastatic cancer was made in 86/107 patients. Extent of initial operative procedure had little if any effect on either the incidence or type of subsequent failures. Extranodal lymphatic involvement was related to a higher incidence of failure. The highest incidence of failure was within surrounding organs and tissues in the upper abdomen. Lymph node failures were also common. Extent of initial disease is discussed in relation to patterns of local recurrence and/or regional lymph node metastasis. Topics discussed include pathways of tumor spread (direct extension, lymphatics, hematogenous spread, and peritoneal involvement), pathologic prognostic features, and failures after initial treatment (autopsy information and University of Minnesota re-operative information). Use of radical operative procedures does not prevent later failures in the gastric bed and regional lymph nodes. Incidence and patterns of failure are somewhat predictable based on anatomical factors, pathways of tumor spread, initial extent of disease, and operative limitations. (65 Refs)

13. HYPERPLASTIC, PRENEOPLASTIC AND NEOPLASTIC LESIONS FOUND IN 83 HUMAN PANCREASES.

Pour PM, Sayed S, Sayed G
Dept. Pathology, Pharmaceutical Div., Preclinical Res., Sandoz Ltd., CH-4002 Basle, Switzerland
Am J Clin Pathol; 77(2):137-152 1982

A thorough histologic examination of the pancreas was performed on autopsy material from 83 military veterans aged 35-88 yr. Hyperplastic, preneoplastic and neoplastic alterations were recorded by severity, multiplicity, location, and age. From this material, two patients had clinically known primary, and three had secondary (metastatic), pancreatic cancer. The following occult malignant lesions were found: two early cancers (one adenocarcinoma and one adenosquamous cell carcinoma), one ductal carcinoma in situ and seven ductular carcinomas in situ. Among patients with ductular carcinoma in situ, three had pancreatic cancer and the remaining four had cancers of other sites (ethmoid, ear, colon, prostate). One patient who was clinically diagnosed as having lung cancer with selective metastases to the pancreas was found to have pancreatic adenosquamous cell carcinoma with lung metastases. Hence, the incidence of neoplastic exocrine lesions was around 10%. In addition, hyperplasia of the ductal and ductular epithelium (in 57% and 39% of the patients, respectively), squamous cell metaplasia of the ductules (in 48% of the cases), as well as endocrine tumors (islet cell adenoma, 10%; mixed ductular-insular adenoma, 3%) were found. Most lesions occurred in the pancreatic head, a few in the tail. These data and other reports lead to the conclusion that, first, the overall incidence of pancreatic cancer appears to be higher than previously reported. Malignant lesions seem to remain clinically occult, either because patients die of other diseases or because of the significantly long latency between premalignant lesions and clinically recognizable invasive cancer. Second, the ductular cells appear to be the progenitor cells of a variety of tumor types, including squamous cell cancer and islet cell tumors, as in the authors' experimental model. (Author abstract) (89 Refs)

14. LATE RESULTS OF SURGICAL TREATMENT IN ESOPHAGEAL CARCINOMA AND FACTORS INFLUENCING PROGNOSIS.

Li R, Lu Y, Chen H, Gu Y, Yang J, Hu J
First Affiliated Hosp., Beijing Medical Coll., Beijing, People's Republic of China
Chin Med J [Engl]; 94(11):729-732 1981

The 5-to 20-yr survival rates of 664 esophageal cancer patients who had undergone surgical resection (radical in 575, palliative in 89) are presented and factors influencing prognosis are discussed. All resected tumors were squamous cell carcinomas. Sixteen cases were lost to follow-up. The 5-, 10-, and 20-yr survival rates of the 575 radically resected patients were 28.2%, 20.0%, and 7.4%, respectively. The 5-yr survival rate of the 89 palliatively resected patients was 2.2% (2 patients). Regardless of whether l ymph node metastases were present, tumors located in the lower third of the esophagus yielded the highest survival and those in the upper third the lowest. The 5-yr survival of patients with lymph node metastases was 6.3% compared with 47.9% of those without metastases. Tumor growth outside the esophagus had an unfavorable prognosis, although when lymph node metastases were present, depth of invasion did not affect survival. Of the 82 patients who died after 5 yr, 5 died of recurrences, 2 of a second primary esophageal cancer in the upper third of the esophagus more than 10 yr after resection, 8 died of other malignancies, and 52 died of intercurrent disease. Of the 413 patients who died within 5 yr of radical resection, 32 died postoperatively and 244 died of recurrent tumor (primarily in the thoracic cavity). Thus, postoperative prognosis was affected by regional lymph node metastasis, tumor location, and depth of penetration into the esophageal wall. (no Refs)

15. COMPARISON OF 5-AND 10-YEAR SURVIVAL RATES IN OPERATED GASTRIC CANCER PATIENTS; ASSESSMENT OF THE 5-YEAR SURVIVAL RATE AS A VALID INDICATOR OF POSTOPERATIVE CURABILITY.

Koga S, Kaibara N, Kishimoto H, Nishidoi H, Kimura O, Okamoto T, Tamura H
Dept. Surgery, Tottori Univ. Sch. Medicine, Yonago-shi, Nishi-machi 36-1, 683, Japan
Langenbecks Arch Chir; 356(1):37-42 1982

Five- and 10-yr survival rates (SR) in primary gastric cancer patients treated by gastrectomy are compared. Causes of death in patients who died greater than 5 yr postoperatively are examined, and pathologic findings in originally resect specimens of patients with cancer recurrence have been re-evaluated. For the 447 patients included in the study, the 5-yr SR was 45.9%; the 10-yr SR was 43.0%. The 5-and 10-yr SR for 315 curatively operated patients was 63.0% and 59.1%, respectively. In each cancer stage, excluding stage IV, the 10-yr SR was 2-6% lower than the 5-yr SR. Patients with cancer limited to mucosa had 107.7% the 10-yr SR, and patients with the muscle layer of serosa involved had 67.7% of the 10 yr SR. Of 315 patients who underwent curative surgery, 176 (55.9%) survived for 5 yr and 139 (78.9%) survived greater than 10 yr postoperatively. Thirty-seven patients died between yr 5 and yr 10 postoperatively, 28 of causes not related to primary gastric cancer, and 9 due to cancer recurrence. Rate of cancer recurrence for the 176 patients who survived greater than 5 yr postoperatively was 5.1%. The recurrence patterns for the nine patients and the pathologic findings on the specimens resected upon first operation are presented. Results showed that in patients treated surgically for gastric cancer, the incidence of death due to recurrence decreases as the postoperative interval increases. The 5-yr SR is an adequate method for assessing curative success of gastric cancer surgery. (5 Refs)

16. GASTROINTESTINAL TUMORS: PROGNOSTIC FACTORS AND THE STATUS OF CHEMOTHERAPY.

Joss R, Goldhirsch A, Tschopp L, Brunner K
Institut fur Medizinische Onkologie, Universitatskliniken, CH-3010 Bern, Switzerland
Dtsch Med Wochenschr; 106(49):1664-1669 1981

Prognosis and status of chemotherapy for gastrointestinal (GI) tumors are reviewed. Results of current methods of treating GI tumors have been unsatisfactory because of generally late diagnosis, poor response to chemotherapy (CT) or radiotherapy (RT), the difficulty of determining the results of treatment, and the small number of cytostatic drugs available. Colorectal cancers (CR) are the most common cancers in industrialized nations. CR occur most frequently in older patients. The 5-yr mortality rate after curative surgery is 50-60%. Factors affecting prognosis include tumor stage, location of metastases, patient age, sex, activity index, grade of malignancy, preoperative carcinoembryonic antigen titer, and duration of disease-free interval. Patients with lung metastases respond poorly to CT but have a favorable prognosis for survival time. The 5-yr survival rate (5ysr) is lower for rectal carcinoma (25%) than for colon carcinoma (32%). The most effective CT agent against CR is 5-fluorouracil (5-FU: response rate 21%). Pancreatic carcinoma (PC) is increasing in incidence. Only 10-15% of all cases are operable. The 5ysr is 5%. CT with 5-FU, adriamycin (ADM), and mitomycin (MM) is recommended for younger patients in good general condition. Combined RT and CT with 5-FU is recommended for inoperable cases. The 5ysr for stomach cancer (SC) is 5-15%. The most important prognostic factor for SC is lymph node involvement. Combination CT with 5-FU, ADM, and MM is recommended for SC. (49 Refs) (In GER)

17. FACTORS INFLUENCING PRIMARY LIVER CANCER RESECTION SURVIVAL RATE.

Tang Z, Yu Y, Zhou X, Chen Q
Liver Cancer Res. Unit, Zhongshan Hosp., Shanghai, People's Republic of China
Chin Med J [Engl]; 94(11):749-754 1981

Factors affecting survival of 153 patients with surgically treated primary liver cancer were investigated. Of these patients, 24.2% were mass screening patients and 20.3% were subclinical patients. Resection of the right side was performed in 34%, left side in 52.9%, partial in 13.1%, radical in 45.1%, and palliative in 54.9%. Operative mortality rate was 12.4%. Single factor analysis demonstrated 5-yr survival rates of 64.9% in patients with postoperative alpha-fetoprotein (AFP) of no more than 20 nanog/ml compared with 0% in those with greater than 20 nanog/ml; 51% for those treated with radical resection compared with 0% for those treated palliatively; 55.5% for mass survey patients compared with 22.3% for clinical patients; 45.0% for patients with single nodules compared with 4.8% for those with multiple nodules; and 44.4% for patients with preoperative negative AFP agar gel diffusion values compared with 15.3% in those with positive values. Combined analysis of multiple variables demonstrated a better prognosis for patients with countercurrent immunoelectrophoresis values of AFP converting to negative postoperatively, AFP less than 20 nanog/ml postoperatively, tumor no more than 5 cm, radical resection, mass screening, and no symptoms of primary liver carcinoma. The most important factors were normalization of AFP values postoperatively and radical resection. (16 Refs)

18. PANCREATIC SURGERY: CARCINOMA OF THE PANCREAS.

Bodner E
II. Univ.-Klinik fur Chirurgie, Anichstrasse 35, A-6020 Innsbruck, Austria
Acta Chir Austriaca; 13(4):94-100 1981

Diagnosis and treatment of carcinoma of the pancreas (CP) are reviewed. Early symptoms of CP include loss of weight, feeling of fullness, and loss of appetite. Pain, primarily in the back, is common. Jaundice usually appears as a late effect (in Stage II or later). Occurrence of jaundice depends on the location of CP. Jaundice is the principle symptom in 65-80% of CP of the head of the pancreas. Symptoms should be investigated by study of the patient's history, clinical findings, and blood chemistry findings. Further diagnostic procedures include duodenography, computer tomography, ultrasonography, and laparotomy. Unnecessary laparotomy can be avoided in some cases by use of other methods. Lowered Hb values and elevated alkaline phosphatase values are indicative of CP. Fine-needle biopsy can provide cytological evidence while avoiding complications frequently encountered with surgical biopsy. Diagnostic procedures are often unsuccessful in detecting early stages of CP. Surgery may be curative or palliative, depending on the operability of the tumor. Complications are frequent, and surgical mortality is high. Total pancreatectomy (TP) eliminates risks involved in Whipple's operation but requires continuous postoperative medical treatment. No improvement in survival has been demonstrated for TP. Improvement in survival requires education of the public to improve early detection, reduction of tumor recurrence, and reduction of surgical mortality. (31 Refs) (In GER)

19. FACTOR INFLUENCING THE SURVIVAL TIME OF PATIENTS SUBJECTED TO 'RADICAL' SURGERY FOR CANCER OF VATER'S PAPILLA.

Sellner F, Dinges HP, Jelinek R
Chirurgische Abteilung, Kaiser-Franz-Joseph-Spital der Stadt Wien, Kundratstrasse 3, A-1100 Wien, Austria
Wien Klin Wochenschr; 94(1):5-9 1982

Factors affecting survival time were studied in 17 patients (7 men and 10 women, 44-79 yr old, av age 58 yr) undergoing radical partial duodenopancreatectomy for carcinoma of Vater's papilla. Survival time after surgery was 8-186 mo, including patients still alive. The 2-yr survival rate (2y sr) was 69%; the 5-yr survival rate (5ysr) was 54%. The 2ysr was 100% for patients with bilirubin under 5 mg/deciliter and 56% for patients with higher values; the respective 5ysr were 75% and 45%. Patients with intermittent jaundice survived longer (2ysr 100%, 5ysr 80%) than those with relatively constant bilirubin values (2ysr was 50%, 5ysr was 37%). Of 17 patients 6 were in Stage A, 3 in Stage B, and 8 in Stage C. 2ysr was 100% for Stage A, 50% for Stage B, and 42% for Stage C. 5ysr was 84% for Stage A, 50% for Stage B, and 21% for Stage C. The 2ysr was 100% for eight patient with G1 tumors, 67% for four patients with G2 tumors, and 26% for 5 patients with G3 tumors. 5ysr was 100% for patients with G1 tumors, 0% for patients with G2 tumors, and 26% for patients with G3 tumors. The 2ysr was 0% for two patients with lymph node metastases (LNM), compared with 81% for those without LNM. Differences in survival time relating to type of jaundice and tumor staging were not significant. Results indicate that among the patients studied, favorable prognostic factors included low bilirubin levels, recurrent jaundice, high tumor differentiation, early tumor staging, and absence of LNM. Unfavorable indicators included consistently high serum bilirubin, low tumor differentiation, advanced tumor staging, and presence of LNM. (15 Refs) (In GER)

BIOCHEMICAL AND IMMUNOLOGICAL MARKERS

20. CIRCULATING CEA LEVELS IN PATIENTS WITH FULMINANT HEPATITIS.

George PK, Loewenstein MS, O'Brien MJ, Bronstein B, Koff RS, Zamcheck N
(c/o Zamcheck) Mallory Gastrointestinal Res. Lab., Boston City Hosp., Boston, MA, 02118
Dig Dis Sci; 27(2):139-142 1982

CEA levels were determined in blood specimens from 14 persons suffering from fulminant hepatitis. Values ranged from 1.9 to 21 ng/ml with a mean of 7.0 ng/ml. All except one patient had a CEA level greater than 2.5 ng/ml, but only three exceeded 10 ng/ml. There was no correlation between single CEA levels and prognosis, routine liver chemistries, or histopathologic characterization of hepatic tissue obtained at postmortem examination. These data show that patients with fulminant hepatitis commonly had increased circulating levels of CEA, but these elevations were far less than may be found in patients with hepatic metastases. In severe hepatic dysfunction reduced hepatic clearance of CEA may be responsible for the increased levels. (Author abstract) (19 Refs)

21. 5'-NUCLEOTIDE PHOSPHODIESTERASE AND LIVER CANCER.

Tsou KC, Lo KW
Harrison/Surgical Res., Univ. Pennsylvania, Philadelphia, PA, 19104
Methods Cancer Res; 19:273-300 1982

The role of 5'-nucleotide phosphodiesterase (5'NP) in liver cancer is reviewed. Assay for 5'NP by biochemical and histochemical methods, tissue distribution of 5'NP, and methods for determination of 5'NP isozymes in human serum are described. The roles of 5'NP in liver growth and of 5'NP isozyme V (5'NP-V) in primary hepatocellular carcinoma (PHC), liver metastasis, and benign diseases are emphasized. The test for 5'NP isozyme V is a useful diagnostic aid for PHC and liver metastasis, with a very low false-negative rate. When the possibility of cirrhosis can be excluded, a consistent positive 5'NP-V for a protracted period is highly indicative of liver metastasis. The noninvasive nature and low cost of this test support its use in routine follow-up of cancer patients for liver metastasis. (144 Refs)

22. RAPID RADIOIMMUNOASSAY FOR INSULIN AND ITS APPLICATION IN LOCALIZING OCCULT INSULINOMAS BY INTRAOPERATIVE PANCREATIC VEIN CATHETERIZATION.

Zick R, Hammer A, Otten G, Mitzkat HJ
Zentrum Innere Medizin und Dermatologie, Arbeitsbereich, Diabetologie Medizinische Hochschule Hannover, Karl-Wiechert-Allee 9, D-3000 Hannover 61, W. Germany
Eur J Nucl Med; 7(2):85-87 1982

Intraoperative pancreatic vein catheterization at laparotomy and immediate insulin determination of serum samples by rapid radioimmunoassay (RIA) allows localization of insulinomas during surgery and avoids risk of transhepatic catheterization. Two cases are described in which sonography, computed tomography, and selective arteriography did not yield clear diagnosis, but RIA of serum collected intraoperatively helped locate tumors. Serial sampling of tributaries to the vena mesenterica superior and vena lienalis showed locations of elevated insulin levels, which were confirmed by immediate resection of benign insulinomas in both cases. Removal of tumors were followed rapidly by reduced serum insulin levels. (10 Refs)

23. INSULIN RECEPTORS IN HUMAN CANCER.

Benson EA, Holdaway IM
(c/o Holdaway) Section Endocrinology, Auckland Hosp., Auckland 1, New Zealand
Br J Cancer; 44(6):917-920 1981

A variety of human cancers were tested for specific receptors for insulin. Sixty-seven tissue samples (40 tumors, 24 fat, 3 muscle) were obtained during surgery were homogenized; the pellet contained receptors for prolactin and insulin. The insulin-binding assay was performed using porcine unlabeled and insulin labeled with 125I using chloramine-T. Specific binding was measured using Scatchard analysis. All specific binding values were adjusted to a membrane-protein concentration of 3.0 mg/ml; range of values found was 0.5-5.0 mg/ml. Significant insulin binding was detected in all tumor specimens except one breast-tumor sample which had a low yield of membrane protein of 1.5 mg/ml compared to an av value of 33.1 mg/ml. 125I-insulin binding to different types of tumor was compared with insulin binding to normal placenta, fat and muscle. Degradation of 125I-insulin by membranes from normal and tumor tissue was compared in one specimen of colon carcinoma. Little difference was detected in the rate of insulin degradation. Rate of degradation of labeled insulin also appeared similar in different types of tumor (colon, stomach, and breast). Affinity of binding decreased with increasing receptor occupancy. Apparently insulin receptors in normal cells are preserved during malignant transformation. However, other studies have shown that tumors can also synthesize ectopic hormone receptors. Results suggest that insulin binding is a common property of human cancer, and that insulin may help maintain or stimulate the growth of human tumors. (13 Refs)

24. GLUCAGONOMA SYNDROME IN A CASE OF MULTIHORMONAL PANCREATIC TUMOR.

Keller U, Fankhauser S, Schumacher A, Trimble ER, Heitz PU
Departement innere Medizin, Abteilung Endokrinologie und Stoffwechsel, Kantonsspital, CH-4031 Basel, Switzerland
Schweiz Med Wochenschr; 112(9):297-303 1982

A 60-yr-old patient developed signs and symptoms of glucagonoma syndrome (dermatitis, wt loss, anemia and hypoaminoacidemia). However, diabetes mellitus was absent. Glucagonoma was suspected because of markedly elevated plasma glucagon levels and the tumor was subsequently removed by surgery. Acidethanol extraction of the tumor and immunohistochemistry provided evidence of the presence of all four islet hormones, particularly that of glucagon and pancreatic polypeptide and to a lesser extent of somatostatin and insulin. Immunohistochemistry of the tumor (but not plasma) also showed the presence of alpha-HCG. Plasma glucagon immunoreactivity consisted to a large extent (approx 90%) of a high molecular form of glucagon, probably proglucagon. In spite of the presence of alpha-HCG - which is assumed to be a marker of malignancy - the patient had been free of recurrence for the 2-1/2 yr since surgery. The increasing number of cases reported during the past few yr demonstrates that the syndrome is more common than previously suspected. Glucagon secretion and its typical clinical picture may be a valuable marker of a multihormonal pancreatic tumor. In a case of suspected glucagonoma, diagnosis can be established simply by obtaining a plasma glucagon level measurement. (Author abstract) (16 Refs) (In GER)

25. SERUM FERRITIN AND BINDING OF SERUM FERRITIN TO CONCANAVALIN A AS A TUMOR MARKER IN PATIENTS WITH PRIMARY LIVER CELL CANCER AND CHRONIC LIVER DISEASE.

Chapman RW, Bassendine MF, Laulicht M, Gorman A, Thomas HC, Sherlock S, Hoffbrand AV
Dept. Medicine, MRCP, Pond St., London, NW3 2QG, England
Dig Dis Sci; 27(2):111-116 1982

Total ferritin concentration was measured in sera of 30 patients with primary liver cell cancer (PLCC) and 33 patients with cirrhosis and compared with serum alpha-fetoprotein levels as a diagnostic marker of PLCC. Serum ferritin concentration was raised in 19 patients (63%) with PLCC and 11 patients (33%) with cirrhosis. The median level was significantly higher (p less than 0.001) in the PLCC group (560 ug/liter) than in the cirrhotic group (137 ug/liter), although there was considerable overlap. Serum ferritin was positively correlated with serum aminotransferase levels in the cirrhotic patients (r = 0.53, p less than 0.001), reflecting hepatic necrosis, but not in the PLCC patients. The concentration of ferritin binding to concanavalin A was measured in the sera of patients with elevated total serum ferritin. Although the proportion of bound ferritin was decreased in the majority of PLCC sera compared to controls (p less than 0.001), there was overlap with the cirrhotic group, making it unlikely that this assay is useful in distinguishing a tumor-specific isoferritin. Serum alpha-fetoprotein levels were elevated in 21 patients (70%) with PLCC and proved to be a highly sensitive and specific test for PLCC. There was no relationship between the alpha-fetoprotein and serum ferritin concentrations. Serum ferritin is inferior to alpha-fetoprotein as an initial screening test for PLCC, but in alpha-fetoprotein-negative patients serum ferritin may have a role in monitoring therapy. Patients with cirrhosis with normal serum alpha-fetoprotein and ferritin concentrations are very unlikely to have PLCC. (Author abstract) (20 Refs)

26. FIBRINOPEPTIDE A (FPA) LEVEL AND FIBRINOGEN KINETICS IN PATIENTS WITH MALIGNANT DISEASE.

Yoda Y, Abe T
Div. Hematology, Inst. Clinical Medicine, Univ. Tsukuba, Sakurmamura Niihari-gun, Ibaraki-ken 305, Japan
Thromb Haemost; 46(4):706-709 1981

Plasma fibrinopeptide A (FPA) levels were significantly elevated in 18/18 adults with advanced malignancies (8 stomach carcinoma, 3 each lung carcinoma and acute leukemia, 1 each gallbladder carcinoma, metastatic carcinoma, malignant lymphoma, and angiosarcoma) compared with the levels in 10 normal adults (mean 4.6 nanog (ng)/ml in 13/18 patients without disseminated intravascular coagulation (DIC) vs 1.4 ng/ml in normal subjects). Plasma FPA levels were markedly elevated (mean 9.5 ng/ml) in 5/18 cancer patients with DIC. Significant correlations were noted between the fibrinogen turnover rate and both plasma FPA and estimated FPA turnover rate, suggesting that fibrinogen catabolism in cancer patients may be related to thrombin proteolysis. However, studies in a small group of cancer patients disclosed no significant difference in the ratio of the 50% FPA turnover rate to the fibrinogen turnover rate between patients with and without DIC, suggesting that the percentage of intravascular thrombin proteolysis in fibrinogen catabolism was not markedly increased in the presence of DIC. Intravascular thrombin proteolysis is apparently not the major determinant of fibrinogen catabolism in cancer patients. The correlation between FPA and fibrinogen turnover may result from extravascular thrombin control of fibrinogen catabolism and FPA generation. However, an enzyme other than thrombin may be responsible for fibrinogen catabolism and FPA generation in cancer patients. (11 Refs)

27. DNA CONTENT OF PANCREATIC DUCT HYPERPLASIA AND CARCINOMA.

Kozuka S, Nagasawa S, Tsubone M, Taki T
Dept. Pathology, Nagoya Univ. Sch. Medicine, 65 Tsurumai-cho, Showa-ku, Nagoya 466, Japan
Gan; 73(1):119-123 1982

The DNA content of epithelial nuclei of hyperplastic and carcinomatous ducts of the pancreas was examined cytophotometrically. The materials were obtained from two cases of nonpapillary hyperplasia, three of papillary hyperplasia, two of atypical hyperplasia and two of tubular adenocarcinoma, which were selected by reviewing the pancreata of about 1,600 human autopsy cases. A gradual shift was observed in the DNA content from the normal level to a carcinomatous level through various stages of hyperplasia. Based on these findings, the hypothesis that pancreatic duct hyperplasia is a potent precursor of pancreatic carcinoma is discussed. (Author abstract) (7 Refs)

28. AFLATOXINS, B1, B2, G1, G2 IN PRIMARY LIVER CELL CARCINOMA.

Onyemelukwe GC, Ogbadu GH, Salifu A
Dept. Medicine, Ahmadu Bellow Univ., Zaria, Nigeria
Toxicol Lett; 10(2):309-312 1982

The presence or absence of circulating aflatoxins and other mycotoxins in adults (25-65 yr old) with primary liver cell carcinoma (PLCC) was investigated. Serum and urine samples were obtained from each of 20 and 7 PLCC patients, respectively. Serum aflatoxin levels were determined by Velasco Fluorotoxin meter. Mean serum aflatoxin, B1, B2, G1, and G2 levels were 0.069, 0.095, 0.083, and 0.040 ug/ml, respectively. Aflatoxin B1 levels greater than 0.15 ug/ml were measured in three patients; however, higher aflatoxin levels may have been present due to 24 hr serum clearance values of 0.025 to 0.050 ug/ml in these subjects. Hepatitis B surface antigen was detected in eight patients. Two other fungal metabolites, zearalenone, associated with cervical cancer in mice, and Phoma sorghina metabolite, associated with hemorrhagic thrombocytopenia, were identified in two separate urine specimens. Although evidence of aflatoxin carcinogenicity in man is inconclusive, foodstuffs should be protected from excessive aflatoxin contamination. (14 Refs)

29. DETECTION OF HEPATITIS B VIRUS ANTIGENS IN HEPATOCELLULAR CARCINOMA TISSUES.

Goudeau A, Maupas P, Coursaget P, Drucker J, Chiron JP, Denis F, Diop Mar I, N'Diaye PD
(c/o Maupas) Institut de Virologie, Facultes de Medecine et de Pharmacie, 2 bis, boulevard Tonnelle, F-37000 Tours, France
Prog Med Virol; 27:77-87 1981

A serological and pathological immunofluorescence study of hepatitis B (HBV) ant igens was conducted on liver tissues obtained from 15 patients who died from primary hepatocellular carcinoma (PHC) in Dakar, Senegal, where PHC is obvious upon clinical examination and prevalent in patients in the 30-40 yr age range. Tissue localization of hepatitis B surface antigen and hepatitis B core antigen suggested the following etiological scheme for the HBV role in the genesis of PHC: hepatitis with inflammatory phenomena and necrosis followed by post-necrosis cirrhosis with fibrosis and voluminous regenerative nodules; and PHC evolving from the post-necrotic regenerative nodules. (20 Refs)

30. HEPATITIS B INFECTION IN ALCOHOLIC LIVER DISEASE AND PRIMARY HEPATOCELLULAR CARCINOMA IN FRANCE.

Goudeau A, Maupas P, Dubois F, Coursaget P, Bougnoux P
(c/o Maupas) Institut de Virologie, Facultes de Medecine et de Pharmacie, 2 bis, boulevard Tonnelle, F-37000 Tours, France
Prog Med Virol; 27:26-34 1981

The prevalence of hepatitis B virus (HBV) markers was studied in 125 asymptomatic heavy drinkers, 163 patients with alcoholic cirrhosis, and 46 patients with histologically proven primary hepatocellular carcinoma. Hepatitis B surface antigen, anti-hepatitis B surface antigen, and anti-hepatitis B core antigen were tested by solid phase radioimmunoassay. Percentages of HBV markers in the three groups were, respectively, 31.2, 54.6, and 21.7, compared to 5% in a control group of 10,000 normal blood donors from the same area in France. (24 Refs)

31. A CASE/CONTROL STUDY OF HEPATITIS B VIRUS SEROLOGIC MARKERS IN SENEGALESE PATIENTS SUFFERING FROM PRIMARY HEPATOCELLULAR CARCINOMA.

Coursaget P, Maupas P, Goudeau A, Chiron JP, Raynaud B, Drucker J, Barin F, Denis F, Diop Mar I, Diop B
(c/o Maupas) Institut de Virologie, Facultes de Medecine et de Pharmacie, 2 bis, boulevard Tonnelle, F-3700 Tours, France
Prog Med Virol; 27:49-59 1981

At least one hepatitis B virus (HBV) marker associated with HBV infection was found in all patients with primary hepatocellular carcinoma (PHC) and in 87-92% of individuals in three control groups (urban Senegalese, rural Senegalese, leprosy patients with known high incidence of HBV infections). In PHC patients, HBV replication occurred 5x more frequently than in controls, and markers of past infection were 2x less frequent. A significant decrease in HBV replication markers was found in the sequence beginning with HBV to cirrhosis and finally to PHC, suggesting that active replication becomes increasingly defective with advancing malignancy. (28 Refs)

32. ATAXIA-TELANGIECTASIA: IMMUNOCYTOCHEMICAL DEMONSTRATION OF ALPHA-FETOPROTEIN AND HEPATITIS B SURFACE ANTIGEN IN THE LIVER.

Ohama E, Ikuta F
Dept. Neuropathology, Brain Res. Inst., Niigata Univ., Asahimachi 1, Niigata City, 951, Japan
Acta Neuropathol (Berl); 56(1):13-16 1982

The liver, thymus and associated tumor tissue (adenocarcinoma of the stomach in 3 patients and medulloblastoma of the cerebellum in 1 patient) from five autopsy patients with ataxia-telangiectasia (AT) was examined for alpha-fetoprotein (AFP) and hepatitis B surface antigen (HBsAg) using the peroxidase-antiperoxidase method. AFP and HBsAg was detected in the cytoplasm of hepatocytes from all five patients but was not detected in the thymus or tumor tissue. The presence of AFP is consistent with the suggestion that AT patients have an underdevelopment of the liver. More striking is the detection of HBsAg in the absence of clinical or histological evidence of acute hepatitis B virus (HBV) infection in these patients. It is possible that persistent infection with HBV may play a role in the etiology and pathogenesis of AT. AT may be unique among immunodeficiency diseases and HBV carriers in its association with both AFP and HBsAg in the liver. (17 Refs)

33. HEPATIC CANCER AND NON-A NON-B TYPE HEPATITIS.

Shibasaki K, Soga K, Honma A, Ichida F
Dept. Internal Medicine, Nippon Dental Coll. Niigata Dental Sch., Niigata, Japan
Nippon Rinsho; 39(10):3251-3256 1981

Patients with chronic hepatic disease included two groups according to presence or absence of hepatitis B surface (HBs) antigen. Hepatic cancer patients with continuous infection of hepatitis B virus (HBV) were classified B-type hepatocarcinoma, and those with non-A non-B (NANB)-type hepatitis were classified NANB type hepatic cancer. Characteristics of the groups were compared. HBs antigens were detected with the aid of RPHA method in 63/125 patients with chronic hepatitis, 33/129 with cirrhosis, and 57/114 with hepatic cancer. Examination of HBV related antigens and antibodies in the serum of 101 patients with hepatic cancer showed that 60/101 had continuous HBV infection, 31/101 had temporary HBV infection, and 10/101 had no detectable HBV antigens or antibodies. Studies of 129 patients with cirrhotic changes indicated that a higher rate of the patients with HBs antigens developed primary hepatic cancer than did those without HBs antigens. Other studies indicated that hepatic cancer occurred within a shorter period of time in patients with presence of HBs antigen than in those without HBs antigen. Comparison of characteristics of B-type hepatocarcinoma patients (B Group) and NANB-type hepatocarcinoma patients (NANB Group) showed that the B Group patients developed cancer with an average of 5 yr earlier than the NANB Group patients, the male:female ratio of the B Group was less than that of the NANB Group, more NANB Group patients had a history of blood transfusions and hepatitis, and more B Group patients had no history of alcohol consumption. (29 Refs) (In JPN)

34. PREDICTIVE VALUE OF TUBE LEUKOCYTE ADHERENCE INHIBITION (LAI) ASSAY FOR BREAST, COLORECTAL, STOMACH AND PANCREATIC CANCER.

MacFarlane JK, Thomson DM, Phelan K, Shenouda G, Scanzano R

(c/o Thomson), Montreal General Hosp., 1650 Cedar Ave., Montreal, Quebec H3G 1A4, Canada

Cancer; 49(6):1185-1193 1982

The tube LAI assay measures accurately antitumor immunity in patients with early cancer but fails to detect up to 75% of patients with advanced cancer due to excess circulating organ-specific neoantigen (OSN). Substances such as prostaglandin E2 (PGE2) or aminophylline which increase intracellular nucleotides in leukocytes of patients with advanced cancer reversed this nonreactivity and greatly increased the sensitivity of the assay without any loss of specificity. Antitumor immunity can now be detected in advanced cancer, and a combination of the two assays gives prognostic potential to the assay: a positive test with PGE2 and negative test without indicates the patient has a large tumor burden. The specificity of the assay for each cancer was high and in most instances was greater than or equal to 95%. The PGE2 stimulated assay retained the high specificity. The sensitivity of the regular tube assay was often low, 33-56% because of the many advanced cancer patients tested, whereas the PGE2 stimulated assay showed almost a two-fold increase in sensitivity, 67-93%. The diagnostic value of the assay was estimated by calculating the predictive value for different prevalences of cancer. It was found that at low prevalences of cancer as found in the general population, the assay had a low diagnostic value since few patients with a positive test would have the cancer tested for. With prevalences of cancer of 5% or greater as might be found in a tertiary care clinical setting, the assay would seem to have diagnostic value since one half or more patients with a positive test would have the cancer tested for. Most false positives, but not all, are found in patients who have lesions that are often considered to increase their risk for cancer: severe dysplasia of breast, colon adenomas, chronic atrophic gastritis ad chronic pancreatitis, suggesting that the assay predicts oncogenesis. (Author abstract) (35 Refs)

SURGICAL AND RADIATION THERAPY

35. CONTROLLED TRIAL OF ADJUVANT CHEMOTHERAPY FOLLOWING CURATIVE RESECTION FOR GASTRIC CANCER.

Gastrointestinal Tumor Study Group, Bruckner HW, Kabakow B, Storch J, O'Connell MJ, Schutt AJ, Rubin J, Moertel CG, McIlrath D, Weiland L, Hahn RG, Douglass HO, Nava HR, Pickern J, Nime F, Berjian RA, Milliran S, Sweeney PM, Livestone EM, Wright HK, Knowlton A, Marsh J, Ropka M, Bellezza MA, Mayer RJ, Lokich JJ, Brooks J, Carson JM, Mitchell MS, Johnson K, Ramming KP

(c/o Douglass), Roswell Park Memorial Inst., 666 Elm St., Buffalo, NY, 14263

Cancer; 49(6):1116-1122 1982

Following curative resection for gastric adenocarcinoma, 142 patients were rando mized to receive adjuvant chemotherapy of methyl-CCNU (semustine) and 5-Fluorouracil or to be closely followed without chemotherapy. The median patient had been followed for 4 yr. At the present time, there have been 38 recurrences and 40 deaths among the 71 patients in the control arm and 28 recurrences with 29 deaths in the group of patients randomized to chemotherapy. Median survival for control patients is 33 mo whereas it is estimated to be in excess of 4 yr for the adjuvant therapy group. A survival advantage appears to be associated with adjuvant treatment, a test for treatment difference being significant (p less than 0.03) after adjustment for important covariates. Survival and disease-free intervals are longer in the chemotherapy arm for patients in all prospective stratification subgroups (proximal and total vs distal subtotal gastrectomy, presence or absence of lymph node metastases, invasion of adjacent organs vs confined to stomach wall and location of tumor within the stomach). A final assessment of this surgical adjuvant approach must await complete results of this trial, as well as of others currently in progress evaluating this same concept. (Author abstract) (21 Refs)

36. THE FATES OF 30 PATIENTS FOR WHOM LIVER TRANSPLANTATION WAS CONSIDERED DURING THE PERIOD 1977-1979, AND ACTUALLY PERFORMED IN 7 OF THEM.

Gips CH, Krom RA, De Groot EH

Afdeling Leverziekten, Academisch Ziekenhuis, Groningen, The Netherlands

Ned Tijdschr Geneeskd; 125(22):868-875 1981

Liver transplantation was considered in 30 patients (6 men and 24 women, median age 39 yr) with various hepatic diseases during the period 1977-1979. Diagnosis included liver cirrhosis in 13 patients, hepatocellular carcinoma in 9 (2 men and 7 women, median age 27 yr), hepatic adenoma in 1, hemangioendothelial sarcoma in 1, cholangiocarcinoma in 1, and congenital anomalies in 3. The length of the disease was 2 mo (0 mo to 7 yr) for the patients with hepatocellular carcinoma, 12 mo for the patient with hepatic adenoma, and 2 mo for the patient with hemangioendothelial sarcoma. Orthotopic liver transplantation was performed in seven patients, including two with primary hepatocellular carcinomas. One of the seven patients died on the day of the transplantation, one with hepatocellular carcinoma died 3 mo later, and two others died after 15 and 37 days, respectively. Three patients, including one with hepatocellular carcinoma, were alive at the date of reporting. (6 Refs) (In DUT)

37. INDICATIONS FOR LIVER TRANSPLANTATION AND THE REFERRAL PROCEDURE.

Gips CH, Krom RA, Houthoff HJ, Schuur KH
Afdeling Leverziekten, Academisch Ziekenhuis, Groningen, The Netherlands
Ned Tijdschr Geneeskd; 125(22):875-878 1981

The indications of orthotopic liver transplantation and the referral procedure are described. Liver transplantation can be indicated for patients with primary hepatocellular carcinoma and other primary liver tumors, but not for patients with hepatic metastases of extrahepatic tumors, except in exceptional cases, and only rarely for patients with cholangiocarcinoma. Metastases and invasion of other organs and tissues and extrahepatic tumors must be ruled out with certainty. Tumor biopsy and exploratory laparotomy should be avoided in patients scheduled for liver transplantation due to the risk of metastasis. The examinations should include liver and spleen scintigraphy, echography, angiography, laparoscopy, computer tomography, planography, cavography, thoracoscopy, skeletal scintigraphy and possibly bone marrow biopsy. The patients should also be examined for liver cirrhosis. (8 Refs) (In DUT)

38. HUMAN ORTHOTOPIC LIVER TRANSPLANTATION: A REPORT OF 4 CASES.

Li C, Liu Z, Huang Z
Liver Transplantation Unit, Guang dong Provincial People's Hosp., Guang dong Province, People's Republic of China
Zhonghua Qiguan Yizhi Zazhi; 2(1):10-13 1981

Based on technics derived from animal experimentation, orthotopic liver transplantation was performed for four cases of primary liver cancer (all males; aged 21-47 yr old). Preoperative laparotomy had confirmed the diagnosis of advanced liver cancer, not treatable by lobectomy. Donor livers were obtained from male cadavers (24-44 yr old). Post-transplantation survival ranged from 39 to 203 days. Major causes of death were septicemia and pulmonary infections. Transplantation technics and associated problems were discussed. (6 Refs) (In CHI)

39. SURGICAL MANAGEMENT OF UNRESECTABLE CARCINOMA OF THE PANCREAS.

Sarr MG, Cameron JL
Dept. Surgery, Johns Hopkins Hosp., Baltimore, MD, 21205
Surgery; 91(2):123-133 1982

The benefits of palliative surgery for carcinoma of the pancreas were reviewed in over 8,000 patients in the English literature from 1965 to 1980. The results suggest that biliary bypass prolongs survival, relieves the sequelae of extrahepatic biliary obstruction, and improves the quality of survival. Cholecystojejunostomy to a jejunal loop is easily and safely constructed and should be used instead of choledochojejunostomy unless tumor encroaches near the choledochocystic junction. Percutaneous internal biliary drainage can offer an effective alternate form of palliation in the poor-risk operative candidate or in the patient known to have nonresectable disease. Concomitant gastroenterostomy is recommended in all patients undergoing surgery when prolonged survival is expected. The addition of gastroenterostomy does not increase the operative mortality rate in these patients. If gastroenterostomy is not performed, 13% can be expected to develop subsequent duodenal obstruction. Intraoperative chemical splanchnicectomy with 50% ethanol is effective in relieving pancreatic cancer-related pain. Surgical intervention, as well as providing diagnosis and feasibility of resection, also offers considerable palliative benefit for the patient with nonresectable pancreatic cancer. (Author abstract) (130 Refs)

40. PANCREATIC AND PERIAMPULLARY CARCINOMA. EXPERIENCE WITH 200 PATIENTS OVER A 12 YEAR PERIOD.

Piorkowski RJ, Blievernicht SW, Lawrence W, Madariaga J, Horsley JS, Neifeld JP, Terz JJ

(c/o Lawrence) Div Surgical Oncology, Medical Coll. Virginia, MCV Station, Box 11, 1200 East Broad St., Richmond, VA, 23298

Am J Surg; 143(2):189-193 1982

The operative management of 200 patients with pancreatic and periampullary cancer was reviewed. Patients with metastatic disease and biliary obstruction are best treated by the nonoperative techniques of biopsy and internal biliary drainage if technically feasible. For patients who undergo exploration and are found to be candidates for a bypass procedure, both biliary and gastroduodenal bypass should be performed. Lymph node involvement and age of the patient were found to be significant variables in determining the candidates suitable for curative resection. A definite incidence of multicentricity was found in patients undergoing total pancreatectomy for ductal carcinoma of the pancreas; however, significant problems with diabetic management arose from this procedure. The primary site of the lesion as well as the intelligence and socioeconomic background of the patient should dictate the type of resection employed. Pancreaticoduodenectomy (Whipple procedure) is recommended for periampullary cancers other than pancreatic carcinoma, while total pancreatectomy may be appropriate in selected patients. However, there has been no evidence thus far in this early trial with total pancreatectomy that more complete resection of the pancreas leads to longer survival. (Author abstract) (9 Refs)

41. A NEW METHOD FOR TREATING CARCINOMATOUS BILIARY OBSTRUCTION WITH INTRACATHETER RADIUM.

Conroy RM, Shahbazian AA, Edwards KC, Moran EM, Swingle KF, Lewis GJ, Pribram HF

Radiology Service, Veterans Admin. Medical Center, 5901 East Seventh St., Long Beach, CA, 90822

Cancer; 49(7):1321-1327 1982

We describe a new method for relieving biliary obstruction due to malignant solid tumors. The method consists of placement of radium needles in a Ring biliary drainage catheter for 3 days. After removing the radium needles, the catheter is left in place to allow for repair of irradiated tissues, then it is removed. The object is to leave the patient with a patent biliary tree without a biliary drainage prosthesis. The clinical course of six patients treated by this method is described, and the autopsy findings in three cases are outlined. Three patients died with a serum total bilirubin ranging from 1-4.5 mg /100 ml, 2 to 3 mo after removing the drainage catheter. Two patients died before the bile drainage catheter could be removed. One patient is alive with a bile drainage catheter in place. Possible modifications in technique and catheters are being considered. (Author abstract) (24 Refs)

SELECTED CLINICAL CORRELATIONS

42. LINITIS PLASTICA INVOLVING THE ENTIRE GASTROINTESTINAL TRACT.

Harper TG, Sperling HV, Easler RE
(c/o Sperling) Dept. Pathology, Western Pennsylvania Hosp., Pittsburgh, PA
J Clin Gastroenterol; 4(1):29-33 1982

Linitis plastica was diagnosed in a 52-yr-old man who presented with wt loss and diarrhea; certain characteristics in the case made differential diagnosis difficult. Radiological, clinical, and pathological findings of the colon, small intestine, and stomach were found which characterized other diffuse diseases such as Crohn's disease, Whipple's disease, and malacoplakia. The presence of mucin in the cells in a cecal biopsy, in addition to the realization that linitis plastica of the stomach may be associated with diffuse gastrointestinal involvement, made the diagnosis clear. Location of the primary tumor was unclear, so a diagnosis of primary linitis plastica of the gastrointestinal tract was proposed in such cases in which both the stomach and colon are involved. (27 Refs)

43. COEXISTING GASTRIC ADENOCARCINOMA AND LYMPHOMA FOLLOWING PULMONARY LYMPHOCYTIC INFILTRATION.

Parham DM, Ledford DK, Pinkston GR
Dept. Pathology, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY, 10021
J Tenn Med Assoc; 74(8):569-572 1981

Lymphocytic interstitial pneumonitis (LIP) was diagnosed in a 66-yr-old man with a 4-yr history of pernicious anemia. Isoniazid was given. Subsequent sputum cultures were positive for mycobacteria. Carcinoma of the stomach was diagnosed 26 mo later; the patient died after 2 mo in a state of severe hypoglycemia. Autopsy disclosed two types of stomach tumor: a poorly differentiated mucinous adenocarcinoma and a well-differentiated lymphocytic lymphoma. Metastases to the lungs, liver, spleen, pancreas, and lymph nodes contained both types of tumor cells. The patient's underlying pernicious anemia may have been partially responsible for the unusual distribution of neoplastic involvement. The LIP may have represented a primary lymphosarcoma of the lung. Widespread cancer-to-cancer metastases are another bizarre aspect of this unusual case. (18 Refs)

44. SPONTANEOUS REGRESSION OF HEPATOCELLULAR CARCINOMA.

Gottfried EB, Steller R, Paronetto F, Lieber CS
(c/o Lieber) Alcohol Res. Treatment Center, Veterans Admin. Medical Center, 130 West Kingsbridge Road, Bronx, NY, 10468
Gastroenterology; 82(4):770-774 1982

A 65-yr-old alcoholic man developed jaundice and biopsy-proven multicentric hepatocellular carcinoma. Coinciding with abstention from alcohol and without treatment, jaundice has resolved, alpha-fetoprotein has become normal, and there is no evidence of tumor demonstrable by radionuclide scanning or laparoscopic liver biopsy. The patient is alive and well 48 mo after the initial diagnosis. Regression of this tumor in the untreated adult has not previously been reported. (Author abstract) (24 Refs)

45. EARLY PRESENTATION OF CARCINOMA OF THE SMALL BOWEL IN CROHN'S DISEASE ('CROHN'S CARCINOMA'): CASE REPORTS AND REVIEW OF THE LITERATURE.

Fresko D, Lazarus SS, Dotan J, Reingold M
(c/o Lazarus), Kingsbrook Jewish Medical Center, 86 East 49th St., Brooklyn, NY, 11203
Gastroenterology; 82(4):783-789 1982

We report here three cases of adenocarcinoma of the small bowel complicating Crohn's disease ('Crohn's carcinoma'). In two cases, the adenocarcinoma was discovered in the first attack of enteritis. In only one other case in the literature, a similar presentation was described. A review of 59 reported cases of adenocarcinoma of small bowel in Crohn's disease, together with these three cases reveals that: (a) the cancer develops at a younger age than in carcinoma de novo; (b) there is no difference in incidence of carcinoma in the first, second, and third decades after the onset of symptoms of Crohn's disease; (c) in 73% of cases, the neoplasm arose in the ileum; (d) in all but one case it developed in inflamed segments of bowel; (e) in 31% of cases the cancer developed in a bypassed segment of bowel. This analysis clearly demonstrates that 'Crohn's carcinoma' is a complication in Crohn's disease and not a chance coexistence of two diseases in the same patient. (Author abstract) (50 Refs)

46. CHYLOUS ASCITES AND CHYLOTHORAX. PRESENTING MANIFESTATION OF PANCREATIC CARCINOMA.

Patel RM, Purow E
Dept. Gastroenterology, Veterans Admin. Medical Center, 800 Poly Place, Brooklyn, NY, 11209
NY State J Med; 82(3):349-351 1982

A 67-yr-old man presented with upper gastrointestinal bleeding, a small right pleural effusion, and ascites with no significant symptoms of pancreatic carcinoma. Chylous fluid was demonstrated by thoracentesis and abdominal paracentesis. Obstruction of lymph flow at the first and second lumbar vertebrae was shown by lymphangiography. At laparotomy, a hard mass extending from the retroperitoneum at the root of the mesentery, in the area of the pancreas to the porta hepatis was found along with liver metastases. Histopathological study revealed adenocarcinoma of the pancreas. (20 Refs)

47. FOCAL DILATATION OF INTRAHEPATIC BILE DUCTS (CAROLI'S DISEASE), CHOLANGIOCARCINOMA, AND SCLEROSIS OF EXTRAHEPATIC BILE DUCTS: A CASE REPORT.

Ludwig J, Wiesner RH, LaRusso NF
Dept. Anatomic Pathology, Mayo Clinic, Rochester, MN, 55905
J Clin Gastroenterol; 4(1):53-57 1982

A 33-yr-old woman presenting with vague epigastric pain, pruritis, and tea-colored urine was thought to have primary sclerosing cholangitis based on endoscopic retrograde cholangiograms. The patient died unexpectedly due to hepatic failure 9 mo after the onset of symptoms. Autopsy revealed focal dilation of intrahepatic bile ducts, fibrosis involving extrahepatic bile ducts, and cholangiocarcinoma. While the tumor was found in the area of the common hepatic and common bile ducts, the lumens of which were narrowed by periductal fibrosis, the periductal sleeves were free of neoplastic tissue. The periductal fibrosis may have been tumor-related or a previously unobserved manifestation of the fibrocystic hepatobiliary diseases. Only four other cases of cholangiocarcinoma complicating focal dilation of the intrahepatic bile ducts were found in the literature. (9 Refs)

48. THE ROLE OF SURGERY IN THE MANAGEMENT OF GASTRIC LYMPHOMA.

Fleming ID, Mitchell S, Dilawari RA
1296 Peabody Ave., Memphis, TN, 38104
Cancer; 49(6):1135-1141 1982

With the development of more effective combination chemotherapy and radiation, the role of surgical resection in the management of gastric lymphoma is reappraised. A retrospective review of 32 patients with gastric lymphoma, diagnosed and treated during the period between 1966-1979, is presented in an attempt to evaluate the relative effectiveness of the various modalities of diagnosis and treatment. Preoperative gastric barium x-ray studies were abnormal in 28 patients but were infrequently diagnostic of lymphoma. Endoscopy was employed in 15 patients with washings and biopsy. the biopsies were reported: four nondiagnostic; three suspicious of tumor; three carcinomas; and in only five patients was a clear diagnosis of lymphoma established. Fifteen patients were treated on the basis of biopsy via gastroscopy, or were explored and not resected and were treated with chemotherapy and/or radiation therapy. Fourteen of the nonresected patients have died with disease; 1 patient is surviving with disease at 20 mo. Surgical resection was accomplished in 17 of the 32 cases, with 7 patients (41%) surviving from 2-12 yr. Aggressive primary chemotherapy with four-drug combination (CAOP) without surgical resection has resulted in massive upper gastrointestinal hemorrhage in four of five patients thus treated. This required emergency surgery for patients with depressed leukocyte and platelet counts. No perforation of the stomach was seen with primary chemotherapy as reported by other authors. In this series surgical exploration was necessary to establish a definite histologic diagnosis in 27 of the 32 patients. Exploration was an essential step in establishing the extent of disease to plan therapy. The only long-term survivors free of tumor were those which had been surgically resected. Resection of the gastric lymphoma prevented the complication of hemorrhage and perforation associated with chemotherapy and radiation therapy. (Author abstract) (25 Refs)

49. PRIMARY GASTROINTESTINAL LYMPHOMA: A 30-YEAR REVIEW.

Weingrad DN, DeCosse JJ, Sherlock P, Straus D, Lieberman PH, Filippa DA
(c/o DeCosse), Memorial Hosp., 1275 York Ave., New York, NY, 10021
Cancer; 49(6):1258-1265 1982

The authors reviewed all cases of non-Hodgkin's lymphoma primarily involving the gastrointestinal tract treated at Memorial Hospital during the period from 1949-1978. Complete clinical records were available in 104 cases. Slides of original pathology specimens were available in 81 cases. Tumors were classified by Rappaport, Lukes-Collins and modified Kiel classifications. All patients were staged retrospectively, using modified Ann Arbor staging. The primary tumor was in the stomach in 76 patients, in the small bowel in 15 and in the large bowel in 13. The life-table survival for all patients at 5 years was 44% and for the 81 Stage I and II patients it was 53%. We found a trend toward improved survival for patients treated in the last decade ($p = 0.05$). Using Cox regression analysis, survival was found to be correlated with stage (p less than 0.0001) and involvement of adjacent structures ($p = 0.007$). For Stage I patients, resection and radiation therapy were equally effective alone in controlling local tumor even though factors responsible for the selection of either treatment could not be identified. For Stage II patients, resection combined with radiation therapy controlled local disease better than either treatment alone. For Stage II, patient survival was correlated with the pattern of nodal involvement (p less than 0.0001). Neither the choice of treatment (resection, radiation therapy, or resection with radiation therapy; $p = 0.17$) nor the involvement of resected margins ($p = 0.22$) affected survival. Among 81 Stage I and II patients, 68% had recurrences outside the primary field of treatment and 60% outside the abdomen. Systemic multiple modality therapy should be considered for patients at high risk for recurrence. (Author abstract) (27 Refs)

50. COMPARISON OF LIVER ENZYMES AND LIVER SCAN IN THE DETECTION OF HEPATIC METASTASES.

Nanji AA, Jetha N

Vancouver General Hosp., 855 W. 12th Ave., Vancouver, B.C. V5Z IM9, Canada

J Clin Hematol Oncol; 12(1):17-23 1982

We studied 100 patients with autopsy proven metastatic liver disease and another 100 patients with no evidence of metastases to compare the sensitivity, specificity and predictive value of the liver scan, alkaline phosphatase, lactate dehydrogenase (LDH) and glutamic oxaloacetate transaminase in the detection of hepatic metastases. We found LDH to be a fairly sensitive and specific indicator of metastatic liver disease. The patients with metastases were subdivided into four groups depending on whether the scan and enzymes were positive or negative. Study of these groups revealed that the scan was of little additional value to what was already obtained by clinical examination and enzyme measurements. (Author abstract) (10 Refs)

51. INCIDENCE AND DETECTION OF OCCULT HEPATIC METASTASES IN COLORECTAL CARCINOMA.

Finlay IG, Meek DR, Gray HW, Duncan JG, McArdle CS

Univ. Dept. Surgery, Royal Infirmary, Glasgow G4 0SF, Scotland

Br Med J; 284(6318):803-805 1982

Isotope liver scan, ultrasonography, and computed tomography of the liver were performed during the postoperative period in 43 consecutive patients undergoing laparotomy for colorectal carcinoma. Obvious hepatic metastases were detected in six patients at the time of surgery. Eleven patients considered to have a disease-free liver at laparotomy developed hepatic metastases during the 2-yr follow-up period. These patients were considered to have had occult hepatic metastases at the time of surgery. Postoperative isotope liver scan, ultrasonography, and computed tomography detected the presence of overt metastases in four, five, and six patients respectively. Of the 11 patients with occult metastases, isotope liver scan, ultrasonography, and computed tomography detected one, three, and nine respectively. These observations suggest that 29% of patients undergoing apparently curative resection for colorectal carcinoma possess occult hepatic metastases and that computed tomography is superior to ultrasonography and isotope liver scan in detecting them. (Author abstract) (10 Refs)

52. INTRAHEPATIC ARTERY 5-FLUOROURACIL AND MITOMYCIN-C IN PREVIOUSLY UNTREATED PATIENTS WITH HEPATIC METASTASES FROM COLORECTAL CARCINOMA.

Cowan JD, Easterbrook J, Mills GM, McCracken JD
Dept. Medicine, Brooke Army Medical Center, Ft. Sam Houston, TX, 78234
Milit Med; 147(3):220-223 1982

Fourteen patients with previously untreated metastatic colorectal cancer limited to the liver were treated with intermittent intrahepatic artery 5-fluorouracil (1,000 mg/M2, D1-D4) and Mitomycin-C (3 mg/M2, D1 and D3) every 4 to 6 wk. Toxicity was minimal, with an overall response rate of 28.6% (2 complete responses and 2 partial responses), using physical examination, liver scan, and angiography to document response. Because of the complete responses and minimal toxicities observed, more aggressive chemotherapy schedules utilizing this regimen deserve exploration. (Author abstract) (15 Refs)

53. GELFOAM POWDER EMBOLIZATION OF THE HEPATIC ARTERY IN LIVER METASTASES OF CARCINOID TUMORS.

Lunderquist A, Ericsson M, Nobin A, Sanden G
Dept. Diagnostic Radiology, Univ. Hosp., S-22185 Lund, Sweden
Radiologe; 22(2):65-70 1982

Transcatheter embolization (TE) of hepatic arteries was performed in five patients (53-74 yr old) with hepatic metastases of carcinoid tumors of the small bowel. Four patients had previously undergone resection of the primary tumor and cholecystectomy. Four patients had undergone temporary surgical dearterialization to reduce carcinoid syndrome. One patient had undergone partial hepatic resection to reduce tumor volume 6 yr before TE. The objective of TE was to eliminate flushing in four cases and to reduce tumor volume in one case. Hepatic angiograms were performed on all patients prior to TE. TE required 1.0-1.5 ml gelfoam powder in four cases. In the fifth patient embolization of arterial collaterals with 0.25 ml gelfoam powder had no effect on symptoms. Four patients experienced pain in the upper right quadrant immediately after TE and continuing for 12-24 hr. Flushing symptoms disappeared in 3/4 patients immediately after TE. One patient was free of flushing after 6 mo. One patient was free of flushing after 1 mo but experienced slight flushing after 1 yr. One patient was free of flushing immediately after TE but experienced slight flushing after 1 mo. TE was successful in reducing tumor volume in one patient. Control angiography of four patients showed recanalization of previously occluded arteries and reduction of tumor vascularity after 1 mo. Accumulation of gas within the tumor was found in one patient. (12 Refs)

54. THE RADIOLOGIC DIAGNOSIS AND MANAGEMENT OF HEPATIC METASTASES.

Wallace S, Chuang VP
Univ. Texas System Cancer Center, M. D. Anderson Hosp. and Tumor Inst., Texas Medical Center, 6732 Bertner, Houston, TX, 77030
Radiologe; 22(2):56-64 1982

Methods of diagnosing and managing hepatic metastases (HM) are presented. The diagnostic radiologist is responsible for diagnosing the presence, nature, and location of HM. Techniques available include conventional radiography, scintigraphy (SC), ultrasonography (US), computed tomography (CT), angiography (AG), and percutaneous biopsy. A recommend diagnostic sequence begins with SC, followed by US as required. Because of expense CT is used only when other methods produce conflicting results. AG is used for solving particular problems and for therapeutic management. AG includes superselective catheterization (SSC), magnification, infusion technique, and pharmacoangiography. SSC can be accomplished in 95% of cases. Hepatic resection is preferred for the relatively uncommon resectable HM. For other cases SSC is recommended to allow hepatic artery infusion (HAI), embolization, and occlusion. HAI allows delivery of high doses of antitumor agents to the HM. In patients with an aberrant hepatic artery, blood flow can be redistributed by inserting a stainless steel coil into the aberrant artery. Transcatheter management of HM depends on the fact that HM are supplied almost exclusively by the hepatic artery, while normal tissue also receives blood from the portal vein. Median survival time for patients with colorectal carcinoma is 8 mo with infusion therapy and 15 mo with infusion therapy with occlusion. In cases treated by embolization following the failure of other treatments, the median survival time is 11.5 mo. (28 Refs)

REHABILITATION ASPECTS

55. PARENTERAL NUTRITION AND HUMAN GASTROINTESTINAL TUMOR PROTEIN METABOLISM.

Stein TP, Buzby GP, Leskiw MJ, Mullen JL
Surgical Res. Lab., Graduate Hosp., Univ. Pennsylvania, 19th and Lombard Sts., Philadelphia, PA, 19146
Cancer; 49(7):1476-1480 1982

We determined the tissue free amino acid distribution in human gastrointestinal tumors and the adjacent normal tissue in two groups of patients. The patients were maintained on dietary control for 7-10 days prior to the surgical removal of the tumor. Patients in Group I ate the house diet ad lib. Their nutritional intake was about half their normal requirement. The second group received parenteral nutrition. Both groups were equally malnourished at the beginning of the period of nutritional control. Group I were 88.2 -7.8% of ideal body weight and Group II, 90.6 -13.8% of ideal body weight. The net calorie and nitrogen intake was about double that of Group I. Tissue-free amino acid analyses were done by gas chromatography. Results: There was a statistically significant increase in the essential amino acids in the tumor tissue relative to the normal tissue in Group II, in contrast to the orally fed Group I where no discernible differences were found. (Author abstract) (15 Refs)

56. A CONTROLLED, PROSPECTIVE, RANDOMIZED TRIAL EVALUATING THE METABOLIC EFFECTS OF ENTERAL AND PARENTERAL NUTRITION IN THE CANCER PATIENT.

Burt ME, Gorschboth CM, Brennan MF
Dept. Surgery, New York Hosp.-Cornell Medical Center, 525 East 68th St., New York, NY, 10021
Cancer; 49(6):1092-1105 1982

In order to evaluate the effects of enteral vs parenteral nutritional support in the cancer patient, patients with localized, squamous cell carcinoma of the distal esophagus were randomized to one of three nutritional regimens: oral feeding, jejunal feeding, or total parenteral nutrition (TPN). Patients were initially studied in the postabsorptive state and again 2 wk after beginning, and while receiving, enteral or parenteral feedings. Radioisotopic tracer methods were utilized to evaluate parameters of glucose and alanine kinetics, and arterial substrate and hormone levels were measured. Arterial plasma glucose and blood lactate levels increased and plasma free fatty acid, serum triglyceride, and serum cholesterol levels decreased to comparable levels in patients receiving jejunal feedings or TPN. Changes in serum insulin, plasma glucagon, serum cortisol, serum growth hormone, and serum thyroxine were similar in patients receiving enteral and parenteral nutrition. Enteral and parenteral nutrition also had comparable effects on both alanine and glucose kinetics. In particular, both jejunal feedings and TPN were equally efficacious in markedly suppressing gluconeogenesis in the cancer patient. Our data would support the conclusion that there are few, if any, differences in the measured metabolic effects of enteral vs parenteral nutritional support in the group of cancer patients studied. (Author abstract) (61 Refs)

57. THE NEEDLE CATHETER JEJUNOSTOMY: PRESENT INDICATIONS, FUTURE USE.

Bongiorno FP
Vascular and General Surgery, Contra Costa County Medical Services, Martinez, CA
Surg Rounds; 5(2):52-55,59,61 1982

Use of the needle catheter jejunostomy (NCJ) is discussed. NCJ is currently the most effective means of delivering total enteral nutrition to the postoperative patient and is indicated after extensive abdominal procedures (eg pancreatectomy, gastrectomy, colectomy, esophagectomy) and for prevention of malnutrition after lesser procedures. Patients receiving chemotherapy and radiotherapy are the group for whom the greatest potential use of NCJ is indicated. Use of NCJ on 193 occasions over a 2-yr period is reviewed; complications and indications for total enteral nutrition are discussed. (16 Refs)

58. OESOPHAGEAL INTUBATION. A REVIEW OF 100 CASES.

Bache JB, Bentick B, Mercer JL
Dept. Thoracic Surgery, Fazakerley Hosp., Liverpool, England
J R Coll Surg Edinb; 27(1):26-32 1982

One hundred consecutive patients requiring esophageal intubation were studied. The underlying pathology was carcinoma of the upper gastrointestinal tract (79 cases), carcinoma of the bronchus (12 cases) and metastatic carcinoma from other sites (2 cases). The other seven patients had benign strictures. Nine patients required two intubations and one patient required three, so that a total of 111 tubes were introduced. Five types of tube were inserted: Celestin, Mousseau-Barbin and Gourevitch tubes at open operation; and Souttar and Procter-Livingstone tubes endoscopically. The principal complications of intubation were found to be obstruction of the tube, dislodgement of the tube, perforation of the esophagus, and chest and wound infection. The Celestin tube was found to give the most favorable results and the Gourevitch tube was particularly useful for high strictures; these two tubes gave the best palliation of dysphagia and carried the lowest mortality rates. (Author abstract) (18 Refs)

59. MALIGNANT OESOPHAGEAL STRICTURES: A REVIEW OF TECHNIQUES FOR PALLIATIVE INTUBATION.

Earlam R, Cunha-Melo JR
London Hosp., Whitechapel, London E1 1BB, England
Br J Surg; 69(2):61-68 1982

A review of the different designs for palliative esophageal intubation tubes confirms Souttar's original suggestion that they should be flexible, incompressible, non-traumatic, compact, have an adequate lumen and stay in place. The internal diameter should be at least 10 mm. The thickness of the wall should be about 1 mm. The length will vary according to the stricture and should be as short as possible, provided that the proximal rim prevents future longitudinal growth occluding the lumen. Various methods of achieving the ability to stay in place are described, which comprise either a large proximal rim or a roughened barrel. No details about results are given because the original patient populations vary so much. Success probably depends more on the technical expertise and experience of the surgeon than specific variations in design. (Author abstract) (110 Refs)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

60. LIVER-FLUKE INFECTION AS AN AETIOLOGICAL FACTOR IN BILE-DUCT CARCINOMA OF MAN.

Flavell DJ
Winches Farm Field Station, London Sch. Hygiene and Tropical Medicine, 395 Hatfield Rd., St. Albans, Herts AL4 0XQ, England
Trans R Soc Trop Med Hyg; 75(6):814-824 1981

Evidence for an etiologic relationship between liver fluke infections (Clonorchis sinensis in southern China, Korea, and Japan; Opisthorchis viverrini in northeast Thailand) and primary cholangiocarcinoma of the liver is discussed. The etiology of cholangiocarcinomas arising in association with these trematodes is multifactorial. In the case of Opisthorchis, when freshwater ciprinoid fish containing metacercariae are eaten undercooked or raw, the metacercariae excyst in the duodenum and the juvenile flukes migrate through the common bile duct and extrahepatic biliary system to the intrahepatic bile ducts, where they mature and lay their eggs. For both parasites, the malignant transformation of infected bile ducts may initially involve a high turnover of hyperplastic biliary epithelial cells, caused directly by the parasite. This process may be further stimulated by a low protein intake by the host. The hyperplastic and proliferating bile ducts may be susceptible to the action of carcinogen(s) present at levels too low to induce cholangiocarcinomas in uninfected persons. Such carcinogens may be naturally occurring or they may form in vivo from ingested precursor molecules or endogenous substances. The host's immunologic status may also be affected by the infection, which may play a role in tumorigenesis. (77 Refs)

61. STOMACH CANCER FOLLOWING GASTRIC SURGERY FOR BENIGN DISEASE.

Dougherty SH, Foster CA, Eisenberg M
(c/o Eisenberg) Dept. Surgery, Long Island Coll. Hosp., 340 Henry St., Brooklyn Heights, NY, 11201
Arch Surg; 117(3):294-297 1982

The records of 1,079 patients with gastric carcinoma were reviewed. Of these, only 21 (about 2%) had had previous gastric surgery for benign disease, usually peptic ulcer. The average interval between the original gastric surgery and the discovery of stomach cancer was 26.9 yr. The symptoms of cancer presentation were not distinguishable from other forms of the postgastrectomy syndrome. Gastric cancer tended to develop in these patients during the 6th decade of life, irrespective of when they had had their original gastric surgery, strongly suggesting an age-related factor. Although it would appear that previous gastric surgery for benign disease is not a major risk factor for the subsequent development of gastric cancer, such a relationship may exist. Patients who have undergone gastrectomy should be followed up carefully for the recurrence of symptoms. (Author abstract) (28 Refs)

62. SUBSEQUENT CANCER RISK IN THE INCIDENCE COHORT OF ROCHESTER, MINNESOTA, RESIDENTS WITH DIABETES MELLITUS.

Ragozzino M, Melton LJ, Chu CP, Palumbo PJ

(c/o Melton) Dept. Medical Statistics and Epidemiology, Mayo Clinic and Mayo Foundation, Rochester, MN

J Chronic Dis; 35(1):13-19 1982

Subsequent cancer incidence was determined in the population-based incidence cohort of Rochester, Minnesota residents diagnosed with diabetes mellitus between 1945 and 1969. The relative risk of having cancer, excluding cervical and nonmelanoma skin cancers, was not significantly increased following the diagnosis of diabetes mellitus. The potential biases of increased medical surveillance among diabetics and exacerbation of subclinical diabetes by occult malignancy did not appear to be important except in the case of subsequent pancreatic cancer. (Author abstract) (32 Refs)

63. METHYLTESTOSTERONE-INDUCED LIVER-CELL TUMOURS.

Cocks JR

Suite 2, 1st Floor, Whitehorse Plaza, Box Hill, Victoria 3128, Australia

Med J Aust; 2(11):617-619 1981

Hormone-induced liver-cell tumors in men are a rarity. Methyltestosterone alone was implicated in five previously reported cases of liver-cell tumors in the English literature. This report presents another such case with classic clinical features and outlines some difficulties of management. (Author abstract) (8 Refs)

64. REGRESSION OF LIVER CELL ADENOMA. A FOLLOW-UP STUDY OF THREE CONSECUTIVE PATIENTS AFTER DISCONTINUATION OF ORAL CONTRACEPTIVE USE.

Buhler H, Pirovino M, Akovbiantz A, Altorfer J, Weitzel M, Maranta E, Schmid M

Dept. fur Innere Medizin, Medizinische Poliklinic, Universitatsspital, Ramistrasse 100, 8091 Zurich, Switzerland

Gastroenterology; 82(4):775-782 1982

Three consecutive young female patients with unresected liver cell adenoma and a history of contraceptive use of several years' duration were followed up over a period of 2-4.5 yr after withdrawal of hormonal medication. One patient presented multiple adenomas and in another, the adenoma was associated with a Budd-Chiari syndrome due to bilateral thrombotic hepatic vein occlusion. Complete regression of the adenomas was documented in all three patients by ultrasonography, liver radionuclide scan, laparoscopy, or computerized tomography. It is concluded that, in selected cases, conservative management after withdrawal of hormonal contraception may be a valid alternative to surgical therapy. (Author abstract) (23 Refs)

65. ACTIVE IMMUNIZATION AGAINST HEPATITIS B IN AN AREA OF HIGH ENDEMICITY. PART I: FIELD DESIGN.

Maupas P, Coursaget P, Chiron JP, Goudeau A, Barin F, Perrin J, Denis F, Diop Mar I

Institut de Virologie, Facultes de Medecine et de Pharmacie, 2 bis, boulevard Tonnelle, F-37000 Tours, France

Prog Med Virol; 27:168-184 1981

The design of an immunization program intended to decrease the incidence of the chronic HBsAg carrier state among young children in Senegal is described. Demographic and cultural data to support the selection of Senegal as a site are presented and two protocols, one for infants (3-6 mo) and one for pregnant women, are described. Problems of follow-up, organization of the program, clinical procedures, and laboratory work are discussed. A program of immunization against HBV, if successful, could also serve as a preventive program against primary hepatocellular carcinoma. (no Refs)

66. ACTIVE IMMUNIZATION AGAINST HEPATITIS B IN AN AREA OF HIGH ENDEMICITY. PART II: PREVENTION OF EARLY INFECTION OF THE CHILD.

Maupas P, Chiron JP, Goudeau A, Coursaget P, Perrin J, Barin F, Denis F, Diop Mar I

Institut de Virologie, Facultes de Medecine et de Pharmacie, 2 bis, boulevard Tonnelle, F-37000 Tours, France

Prog Med Virol; 27:185-201 1981

Experiences with an active immunization program conducted against hepatitis B in Senegal are reported. Pregnant women, children less than 2 yr old, and children born to vaccinated mothers were immunized. Development of anti-HBs was markedly higher in all groups compared to non-immunized controls; immunization of pregnant women did not interfere with immunization of the children. A program of immunization is proposed for areas of high endemicity; routine use throughout African and Asian areas of endemicity is recommended. (21 Refs)

67. CROSS-SECTIONAL AND LONGITUDINAL EPIDEMIOLOGY OF HEPATITIS B IN SENEGAL.

Barin F, Perrin J, Chotard J, Denis F, N'Doye R, Diop Mar I, Chiron JP, Coursaget P, Goudeau A, Maupas P

(c/o Maupas) Institut de Virologie, Facultes de Medecine et de Pharmacie, 2 bis, boulevard Tonelle, F-37000 Tours, France

Prog Med Virol; 27:148-162 1981

Prior to an immunization program, a field study of seric markers of hepatitis B (HBV) infection was undertaken in the Niakhar district of Senegal. Results of radioimmunoassay for HBsAg, anti-HBs, anti-HBc, and HBeAg-anti-HBe, and anti-hepatitis A virus and passive hemagglutination titer of HBsAg showed a high incidence of HBV; HBV increases sharply from 6 mo to 2 yr old, at which time it is found in 38% of the population. In endemic areas 80% of children 6-7 yr old exhibit at least one HBV seric marker indicating past or present infection acquired either during breast feeding or through contact with siblings, relatives, or other community members during the 2-7 yr old period. (6 Refs)

68. EPIDEMIOLOGY OF PRIMARY HEPATOCELLULAR CARCINOMA IN SENEGAL.

Diop B, Denis F, Barin F, Perrin J, Chiron JP, Goudeau A, Coursaget P, Maupas P
Service de Medecine Interne, Faculte de Medecine et Pharmacie, Dakar-Fann, Senegal
Prog Med Virol; 27:35-40 1981

Primary hepatocellular carcinoma (PHC) appears to be a very common tumor in Senegal. PHC is more often found in the age group 31-40 yr, with a mean age of 38 yr. Male cases of PHC predominate in liver-cell cancer in Dakar. PHC occurs predominantly in the Wolof ethnic group, which also account for most of th patients hospitalized in Dakar and the most prominent ethnic group in the Cap-Vert area. PHC exists in in Senegal in every socioeconomic group but is more prevalent among the poorer social classes. Increased numbers of PHC hospitalizations in Dakar occur in November, December, January, and February. In 90% of PHC cases there is an underlying hepatic cirrhosis or fibrosis. (18 Refs)

69. STUDIES ON THE MATERNAL-INFANT TRANSMISSION OF THE HEPATITIS B VIRUS AND HBV INFECTION WITHIN FAMILIES.

Tong MJ, Thursby MW, Lin J-H, Weissman JY, McPeak CM
Liver Diagnostic Center, Huntington Memorial Hosp., 100 Congress St., Pasadena, CA, 91105
Prog Med Virol; 27:137-147 1981

Results of a study of hepatitis B virus (HBV) infection indicate that the major mode of infection in endemic areas may be maternal-infant transmission, although transmission may also occur by other modes. Many infants carrying hepatitis Bs antigen (HBsAg) develop anicteric CPH and become positive for hepatitis Be antigen. Intrafamilial clustering of HBV infection occurs in certain ethnic groups, regardless of their location. Different infected members of a family may exhibit different clinical syndromes. Spread of HBV may be interrupted by treatment of infants of HBsAg mothers and careful use of HBV vaccine in HBsAg- family members. (11 Refs)

70. EPIDEMIOLOGIC STUDY OF REFINERY AND CHEMICAL PLANT WORKERS.

Hanis NM, Holmes TM, Shallenberger LG, Jones KE
Exxon Corporation, P.O. Box 235, E. Millstone, NJ, 08873
JOM; 24(3):203-212 1982

A dynamic retrospective cohort study was performed to examine the mortality experience of workers at Exxon's Baton Rouge, La, refinery and chemical plant. Included were 8,666 regular employees who worked at least 1 mo during the period January 1, 1970 through Dec 31, 1977, and retirees who were alive as of Jan 1, 1970. Mortality from all causes of death was lower than expected when compared with that of the U S population of similar age, sex, and race. Analyses of mortality by specific site of cancer revealed elevated standardized mortality ratios (SMRs) for cancer of the kidney, testis, brain/central nervous system, pancreas, and lymphopoietic sites; none of these elevations was statistically significant. Because of the higher than av mortality from cancer of the pancreas in some Louisiana parishes and the observation that one additional death from cancer of the pancreas in this study would have resulted in a statistically significant SMR at the 95% confidence level, some emphasis was placed on this finding. No evidence was found to link cancer of the pancreas to a specific occupational group. An examination of mortality by occupational class revealed some elevated SMRs for further study. (Author abstract) (24 Refs)

71. MORTALITY PATTERNS AMONG WORKERS IN THREE TEXAS OIL REFINERIES.

Thomas TL, Waxweiler RJ, Moure-Eraso R, Itaya S, Fraumeni JF

Occupational Studies Section, Environmental Epidemiology Branch, NCI, Bethesda, MD, 20205

JOM; 24(2):135-141 1982

The cause-specific mortality experience of 2,509 active and retired members of the Oil, Chemical, and Atomic Workers International Union (OCAW) who worked at three oil refineries in the Beaumont/Port Arthur area of Texas was examined to determine whether there might be unusual patterns of fatal disease related to workplace exposures. Deaths that occurred between 1943 and 1979 were identified from membership records of the OCAW headquarters in Denver and from the records of Union locals in Texas which represent workers at the three refineries. Death certificates were obtained from state vital records offices for the decedents. Cause-specific Proportionate Mortality Ratios (PMRs) were calculated using the mortality experience of the US general population as a standard. Excess mortality from stomach cancer occurred among active union members who worked at Refinery A and among active and retired members who worked at Refineries B anc C. PMRs for leukemia, multiple myeloma, and other lymphomas were elevated, especially among retired workers. Relative frequencies of brain tumor deaths were significantly elevated among active members at all three refineries and slightly elevated among retirees at Refineries A and C. Findings suggest that oil refinery workers may have elevated risks of these cancers and indicate that more definitive studies are necessary. (Author abstract) (22 Refs)

72. CANCER MORTALITY IN A PIGMENT PLANT UTILIZING LEAD AND ZINC CHROMATES.

Sheffet A, Thind I, Miller AM, Louria DB

Dept. Preventive Medicine and Community Health, Univ. Medicine Dentistry New Jersey - New Jersey Medical Sch., 100 Bergen St., Newark, NJ, 07103

Arch Environ Health; 37(1):44-52 1982

Several studies of workers exposed to various forms of chromium compounds have suggested an increased incidence of respiratory cancers. Lead and zinc chromates were among the chromium compounds implicated. The Department of Preventive Medicine and Community Health of the New Jersey Medical School undertook a detailed mortality study of a pigment plant in Newark which utilized both of these compounds. We compared observed deaths from each cause among 1,296 white and 650 non-white males who were employed at the plant between January 1, 1940 and December 31, 1969, with expected deaths, as computed from cause-, age-, and time-specific standard death rates for the United States. A statistically significant relative risk of 1.6 for lung cancer among white male employees was found, as well as among the cohorts of white males employed 10 yr or more. A relative risk of 1.9 was noted for individuals employed at least 2 yr who were at lest moderately exposed to chromates. An increased incidence of lung cancer among non-white males and stomach and pancreatic cancer among the total cohort was also evident. These data support the validity of the association between chromate pigment exposure and lung cancer, suggesting that pigment workers and others exposed to chromate be observed carefully in regard to possible risk of pancreatic and stomach cancers. (Author abstract) (24 Refs)

73. ARSENIC-STATE OF THE ART.

Landrigan PJ
Div. Surveillance, Hazard Evaluations, and Field Studies, NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226
Am J Ind Med; 2(1):5-14 1981

Occupational and domestic exposure to arsenic in United States of America is briefly reviewed: human elimination mechanisms; assay implications; acute poisoning; subacute and chronic toxicity to the skin (dermatitis, Bowen's disease, basal cell and squamous cell carcinomas), liver (cirrhosis, angiosarcoma), respiratory tract (lung cancer), and nervous (peripheral neuropathy), cardiovascular (acrocyanosis), 'blackfoot disease' (gangrene), myocardial infarction, Reynaud's (phenomenon), and hematopoietic (disturbed erythropoiesis, equivocal cancer) systems. Animal cancer-induction studies remain negative. Mutagenicity/chromosomal aberration studies in bacterial-animal-human systems are touched upon. (50 Refs)

74. INTAKE, FORMATION, AND RELEASE OF MUTAGENS BY MAN.

Stich HF, Rosin MP, San RH, Wu CH, Powrie WD, Van Soest PJ, Wattenberg LW, Watson JD, Tannenbaum SR, Wilkins TD, Magee PN, Bruce WR
Environmental Carcinogenesis Unit, British Columbia Cancer Res. Centre, Vancouver, British Columbia V5Z 1L3, Canada
Banbury Rep; 7:247-266 1981

The incidence of stomach cancer was high in Japan during the Edo period of its history, when foodstuffs were not contaminated by industrial or agricultural chemicals. During the past several decades, when the uses of these chemicals increased in Japan and elsewhere, the incidences of cancer of the stomach, esophagus, and mouth in Japan declined steadily. Many classes of compounds occurring in fresh, cooked, and stored foodstuffs have been identified as mutagens. The use of food additives, pesticides, and herbicides will undoubtedly add to the mutagenic load of foodstuffs. The available evidence raises several questions: whether foodstuffs comprise the major source of mutagens (and, by implication, carcinogens) in the human body; why the cancer frequency is so low, despite this daily intake of mutagens; and why DNA repair-deficient patients (eg, those with xeroderma pigmentosum) develop skin cancers at an early age but lack a comparable frequency of gastrointestinal cancers. It is difficult to discard the idea that people always ingest enough carcinogens to produce neoplastic cells, but that the occurrence of this event is enhanced or suppressed by genetic factors, whose role may be greater than hitherto assumed. If mutational events are involved at all in tumor initiation, they may not be the types of events detected by the in vitro bioassays now used. The number of different mutagens in food products, digested foods, and feces is evidently very large. The genetic damage in somatic cells may be the product of the actions of many mutagens rather than of one predominating substance. (31 Refs)

75. ARSENIC-RELATED HEPATIC ANGIOSARCOMA.

Falk H, Caldwell GG, Ishak KG, Thomas LB, Popper H
Chronic Diseases Div., Centers Disease Control, 1600 Clifton Road, NE, Atlanta, GA, 30333
Am J Industr Med; 2(1):43-50 1981

This epidemiological study (highlights only) was conducted to provide additional evidence for arsenic being one cause of hepatic angiosarcoma (HAS). Pathological samples from 350 cases originally diagnosed as HAS in the United States, mostly during 1964-1974, were reexamined. Epidemiological followups (published separately) were made on the 168 confirmed cases involving deaths during 1964-1974. Six cases were attributed to arsenic exposure, five adults from therapy for asthma or psoriasis involving imbibing Fowler's medicine (potassium arsenite), and one child with environmental exposure. Of the five therapy cases (four males and one female, 41-58 yr old), length of therapy and latency period were known only for the males, 10-17 yr and 12-24 yr, respectively. Idiopathic HAS tended to appear much later in life, in the 70s. Four male farmers known to have used Paris green or other unspecified arsenicals for long periods were 68-79 yr old at death from HAS. Two other confirmed cases with deaths prior to 1964 also involved males aged 42 and 50 yr with histories of 6 and less than 15 yr, respectively. The results were taken as supportive of a 1957 report involving autopsies on German vineyards, some dying from HAS and all having both used arsenical insecticides and regularly imbibed a beverage made from the grape skins. (27 Refs)

76. REVIEW OF EPIDEMIOLOGIC STUDY RESULTS OF VINYL CHLORIDE-RELATED COMPOUNDS.

Apfeldorf R, Infante PF
Office Carcinogen Identification and Classification, Health Standards, Programs, Occupational Safety and Health Admin. U. S. Dept. Labor, Washington, DC, 20210
Environ Health Perspect; 41:221-226 1981

Epidemiologic studies of structural analogs of vinyl chloride (VC) are reviewed. Analogs included epichlorohydrin (ECH), trichloroethylene (TCE), vinylidene chloride (VDC), ethylene dibromide (EDB), perchloroethylene (PCE), and carbon tetrachloride (CCl4). Occupational and industrial uses of the compounds include manufacture of epoxy resins (ECH), copolymers and fibers (VDC), petroleum products (EDB), and pesticides (EDB). Other uses include metal degreasing (CCl4, TCE, and PCE) and dry cleaning (PCE and formerly, TCE and CCl4). Bioassays in experimental animals have demonstrated induction of tumors at multiple sites by EDB and CCl4, in the respiratory tract by EDB and ECH, and in the liver by VDC, EDB, TCE, PCE, and CCl4. Studies of workers exposed to ECH or dry cleaning solvents suggest an increased risk of lung cancer, but the increase is not significant, possibly due to sample size. Studies of workers exposed to the other compounds have not given positive evidence of carcinogenicity. All studies have been characterized by insensitivity to increases in mortality because of small sample size. In some studies workers were exposed to more than one suspected carcinogen, making interpretation of results difficult. Estimation of qualitative risk to humans due to specific compounds should be based on experimental animal studies rather than on human epidemiological studies. (17 Refs)

77. EPIDEMIOLOGY OF HEPATIC ANGIOSARCOMA IN THE UNITED STATES: 1964-1974.

Falk H, Herbert J, Crowley S, Ishak KG, Thomas LB, Popper H, Caldwell GG
Chronic Diseases Div., Center Environmental Health, Centers Disease, Control, Public Health Service U. S. Dept. Health and Human Services, Atlanta, GA, 30333
Environ Health Perspect; 41:107-113 1981

The occurrence of hepatic angiosarcoma (HAS) in the United States was studied for the period 1964-1974. Death certificates were reviewed in 22,432 cases of death due to liver tumors. Based on examination of medical records and pathological specimens, 168 cases of HAS were confirmed. Of cases identified as HAS on death certificates, only 42% were confirmed as HAS by other evidence; 50% were confirmed as not

HAS. Only 23% of confirmed cases of HAS would have been identified by a search of death certificates alone. Inadequacies in epidemiological studies are indicated. HAS occurred predominantly in men (male:female ratio 3:1) and more frequently in the younger age groups. The mean age was 50.1 yr for women and 57.9 yr for men. Of 127 men with HAS, 12 had been exposed to vinyl chloride (VC), 15 to Thorotrast (TT), 4 to inorganic arsenic (As), and 3 to androgenic-anabolic steroids (AAS); 93 cases were classified as idiopathic. Of 41 women with HAS, 5 had been exposed to TT, 2 to As, and 1 to AAS; 33 cases were classified as idiopathic. A relationship between HAS and VC, TT, or AAS was more common in the latter part of the study period, probably due to recent introduction of VC and AAS and a long latency period for TT. The mortality rate for HAS was 0.75 cases/10(7) population/yr. The mortality rate was apparently higher in industrialized areas of the Northeast and Midwest and lower in farming states and the South; differences in rates for different areas may have been due to reporting methods rather than to actual differences in occurrence. Four agents have been identified as probable causative factors in HAS, but 75% of cases are of uncertain etiology. (28 Refs)

78. CANCER INCIDENCE AND MORTALITY IN METROPOLITAN NEW ORLEANS, 1974-77.

Halperin ST, Wellbaecher RG, Correa P, Krementz ET
Louisiana Tumor Registry, 2-3-4 Loyola Building, Suite 1000, New Orleans, LA, 70112

Natl Cancer Inst Monogr; 57:409-487 1981

Cancer incidence and mortality in metropolitan New Orleans (1974-77) is discussed in terms of primary site, race, sex, and age. Both malignant tumors and in situ lesions are considered. New Orleans data show an overall high cancer incidence in blacks, mainly due to excessive rates for cancer of the lung, buccal cavity, esophagus, stomach, cervix, and prostate gland. For some cancers, including breast, ovary, bladder, and kidney cancers and the lymphoma-leukemia group, whites have a moderately excessive rate compared with blacks. Differences between New Orleans data and those obtained by the Surveillance, Epidemiology, and End Results Program are described. Particularly marked is the excess of respiratory cancer in New Orleans. (no Refs)

79. CANCER INCIDENCE AND MORTALITY IN NEW MEXICO, 1973-77.

Key CR
New Mexico Tumor Registry, 900 Camino de Salud NE, Albuquerque, NM, 87131

Natl Cancer Inst Monogr; 57:489-595 1981

Data on cancer incidence and mortality in New Mexico (1973-77) by primary site, sex, race, and age are presented. Data for Hispanics, Anglos, and Indians are compared. For all cancers and for the most common cancers, the Anglo population had incidence rates similar to those for whites in the Surveillance, Epidemiology, and End Results Program. Overall rates for Hispanic males and females were considerably lower than those for all whites. However, for some specific cancers, such as gallbladder, stomach, and cervix, the rates were much higher than for comparison populations. Although New Mexico's American Indians have low total cancer incidence rates, the rates for cancer of the gallbladder, stomach, and uterine cervix were even higher than among Hispanics. (no Refs)

80. CANCER INCIDENCE AND MORTALITY IN UTAH, 1973-77.

Lyon JL
Utah Cancer Registry, 540 Arapeen Drive, Room 204, Salt Lake City, UT, 84143

Natl Cancer Inst Monogr; 57:597-627 1981

Data on cancer incidence and mortality in Utah (1973-77) by age, sex, race, and primary site are presented. Both carcinomas and in situ lesions are considered. Utah has the lowest overall incidence of cancer for any of the Surveillance, Epidemiology, and End Results Program registries. The lower-than-expected incidence of cancer is attributed almost exclusively to the portion of the Utah population which is Mormon. Deficits noted for various cancer sites are heavily concentrated in those sites of the body associated with tobacco and/or alcohol use including the tongue, oral cavity, pharynx, larynx, esophagus, and urinary bladder. (no Refs)

81. CANCER INCIDENCE AND MORTALITY IN PUERTO RICO, 1973-77.

Martinez I
Dept. Health, Cancer Control Program, Box 9342, Santurce, Puerto Rico, 00908

Natl Cancer Inst Monogr; 57:947-977 1981

Data on cancer incidence and mortality in Puerto Rico (1973-77) are presented by primary site and sex. Both malignant and in situ lesions are considered. Puerto Rico had a higher incidence of cancer of the mouth, hypopharynx, esophagus, stomach, and penis in comparison with findings for all Surveillance, Epidemiology, and End Results (SEER) Program areas. The incidence for all SEER areas, excluding Puerto Rico, was higher for cancers of the lip, colon, rectum, retroperitoneum, lung, bronchus, pleura, melanoma of skin, breast, corpus uteri, ovary, testis, urinary bladder, kidney, brain, endocrine glands, and lymphomas and leukemias. (no Refs)

82. AN ENVIRONMENTAL HEALTH SURVEY OF DRINKING WATER CONTAMINATION BY LEACHATE FROM A PESTICIDE WASTE DUMP IN HARDEMAN COUNTY, TENNESSEE.

Clark CS, Meyer CR, Gartside PS, Majeti VA, Specker B, Balistreri WF, Elia VJ
Dept. Environmental Health, Univ. Cincinnati, 3223 Eden Ave., Cincinnati, OH, 45267

Arch Environ Health; 37(1):9-18 1982

Ground water that was used as a source of potable water by residents of a small community became contaminated by leachate from a 300,000 barrel pesticide waste dump. An environmental health survey of the residents and an apparent control group was conducted to determine if any adverse health effects resulting from exposure to the toxic compounds, many of which were hepatotoxins, could be detected. The survey utilized a health questionnaire, a clinical examination, and a biochemical screening. The latter included analysis of serum for liver and kidney function parameters, determination of hepatitis A and B serology, and bile acid determinations on fasting and postprandial serum and urine specimens. Air and water from representative homes and urine from study participants were analyzed for selected organic compounds. The biochemical screening was conducted on two occasions 2 mo apart. The initial hepatic profile testing revealed elevated concentrations of the serum enzymes, alkaline phosphatase and serum glutamic oxaloacetic transaminase, in residents who had used the contaminated water. During follow-up testing of these same persons 2 mo later, these values were significantly reduced, as were postprandial serum concentrations of the bile acid of cholyglycine. Six individuals in the exposed group had slight hepatomegaly compared to one individual in the intermediate exposure group and none in the controls. Concentrations of carbon tetrachloride were as high as 18,700 ug/L in the well water samples. The biochemical and clinical observations are suggestive of a transitory liver injury probably related to exposure to the contaminated drinking water. (Author abstract) (24 Refs)

83. COFFEE, TEA AND CANCER: HOW TO TEST HYPOTHESES ON LIFESTYLE AND DISEASE?.

Olsson H, Brandt L
Onkologiska kliniken, Lund, Sweden
Lakartidningen; 79(4):196-197 1982

Coffee and tea consumption of 550 tumor patients was analyzed based on questionnaire data. The patients included 19 with seminomas, 36 with cancer of the upper part of the digestive tract (lips, oral cavity, epipharynx, hypopharynx and esophagus), 59 with Hodgkin's disease, 64 with tumors of the larynx and lungs, 36 with thyroid tumors, 120 with cancer of the urinary bladder or kidneys, 28 with skin cancer, 94 with breast cancer, 16 with testicular teratomas, 28 with melanomas, 20 with cancer of the lower parts of the digestive tract (stomach, bile ducts, pancreas, colon and rectum), and 18 with tumors of the paranasal sinuses, auditory meatus and parotid glands. The median coffee consumption of the patients was 3-5 cups/day, ie, approx the same as in the general population. Fifty-three per cent of the patients with seminomas, 50% of those with cancer of the upper part of the digestive tract and 47% of those with Hodgkin's disease consumed large amounts of coffee (5 cups/day or more). The median tea consumption of the patients was 0 cup/day. Forty-four per cent of the patients with testicular teratomas, 31% of those with thyroid tumors, 32% of those with seminomas, and 29% of those with Hodgkin's disease consumed large amounts of tea (2 cups/day or more). The findings indicate that hypotheses based on complex data on lifestyle (education, occupational status, living conditions, dietary and smoking habits, and alcohol consumption) should be tested in epidemiological studies, rather than the possible relationship between tea and coffee consumption, on one hand, and certain diseases, on the other hand. (6 Refs) (In SWE)

84. CANCER OF THE OESOPHAGUS AND THE USE OF TOBACCO AND ALCOHOLIC BEVERAGES IN TRANSKEI, 1975-6.

McGlashan ND, Bradshaw E, Harington JS
(c/o Harington) Natl. Cancer Assoc. South Africa, P.O. Box 2000, Johannesburg 2000, South Africa
Int J Cancer; 29(3):249-256 1982

A large questionnaire-based sample survey over a period of 2 yr has collected information on tobacco and alcohol use among young and old, male and female respondents in three regions of Transkei selected on the basis of having proved contrasts of incidence experience from esophageal cancer. Results show significant gradients of social fabric and of customary usage of tobacco and alcohol across the three incidence regions. In particular the concept is supported of a synergistic relationship between tobacco and alcohol when both are used by one individual, with the major role being played by tobacco, especially when smoked in pipes. Stress is also laid on contrasts between old and young on the assumption that dynamic shifts of mortality may be expected to follow as the young of today alter the patterns of intake established by their elders. (Author abstract) (10 Refs)

85. EPIDEMIOLOGY OF THE MOST FREQUENTLY OCCURRING TUMORS OF THE DIGESTIVE SYSTEM.

Naujoks-Heinrich S, Dolle W
Abteilung Innere Medizin I, Universitatsklinik, Otfried-Muller-Strasse 10, D-7400 Tubingen, W. Germany
Internist (Berlin); 23(1):1-9 1982

The epidemiology of esophageal, gastric, and colorectal cancer is reviewed. These types of cancer are described with respect to incidence, variations in incidence between countries, age and sex distribution of patients, lethality, exogenous factors that increase the risk of cancer development, benign conditions associated with each, and genetic predisposition to cancer development. Exogenous factors that increase the risk of development of esophageal cancer include alcohol and tobacco use, among the benign conditions frequently associated with this type of cancer are achalasia, scleroderma, Plummer-Vinson syndrome, and benign esophageal stricture. Genetic aspects of gastric and colorectal cancer are examined with respect to studies of the incidence of these diseases in Japanese people living in Japan and emigrants of Japanese ancestry. Exogenous factors that increase the risk of developing gastric cancer include occupational exposure to coal dust and exposure to trace elements such as asbestos in drinking water. Pernicious anemia, gastric polyps, and ulcera ventriculi are among the benign conditions associated with this type of cancer. The role of diet in the development of colorectal cancer is emphasized; the relative significance of animal fats, vegetables, and fiber in the diet is considered. The general field of epidemiology is discussed with regard to methodologic problems, including variations between countries in diagnostic methods and criteria as well as problems in documentation. (52 Refs) (In GER)

86. GASTROINTESTINAL CANCER: ENDOGENOUS FACTORS.

Bruce WR, Correa P, Lipkin M, Tannenbaum SR, Wilkins TD
Ontario Cancer Inst., Toronto, M4X 1K9, Canada
Banbury Rep 7: 468 pp., 1981.

The role of diet in cancer was examined. Sessions on gastrointestinal microbiology (microbiological considerations in experimental studies, effect of diet on human fecal flora, metabolism of xenobiotics by intestinal flora, and intestinal bacterial activity and carcinogenesis), fiber (ecology of gut fermentation in man, dietary fiber breakdown in the human colon role of fat, fiber, and other modifiers of intestinal carcinogenesis in cancer prevention), host response to carcinogens (risk factor profiles for individuals at increased risk for colon cancer, fecal mutagens and colorectal polyps, enzymes of normal, premalignant, and malignant colonic cells, role of cytochrome P-450 in colon response xenobiotics, inhibitors of gastrointestinal neoplasia, colonic activation of carcinogens), mutagens (in extracts of gastrointestinal mucosa, nitrosation in stomach mucosal tissue of humans and dogs, isolation of mutagens produced in the human colon by bacterial action, structural studies and properties of mutagens isolated from human feces, bacterial fluctuation tests of mutagenic activity in human feces, intake, formation, and release of mutagens by man), N-nitroso compounds (endogenous formation of N-nitroso compounds, analysis of human biological specimens for nitrosamines, block nitrosamine formation using ascorbic acid and alpha-tocopherol, distribution and metabolism of nitrate and nitrite in rats, analysis of nitrate, nitrite, and nitrosamines in human feces, metabolism of nitrate), bile acids and other lipids (bile salts as tumor promoters, bile acids in colorectal carcinogenesis, and analysis of feces for benzopyrene after consumption of charcoal-broiled beef) and epidemiology and design of future studies (epidemiologic tests of hypothesis relating diet and cancer, large-scale cohort study of diet and selected digestive system cancers, and possible application of mutagenesis testing to cancer epidemiology). (716 Refs)

SELECTED PRE-CLINICAL STUDIES

87. COMPARISON OF BENZO(A)PYRENE METABOLISM IN BRONCHUS, ESOPHAGUS, COLON, AND DUODENUM FROM THE SAME INDIVIDUAL.

Autrup H, Grafstrom RC, Brugh M, Lechner JF, Haugen A, Trump BF, Harris CC
LHC, NCI, Building 37/2C13, Bethesda, MD, 20205
Cancer Res; 42(3):934-938 1982

The metabolism of benzo(a)pyrene has been investigated in cultured normal human bronchus, colon, duodenum, and esophagus obtained from the same patient. The highest total metabolism was found in bronchus and duodenum, while the highest mean binding level was observed in the bronchus followed, in order, by the esophagus, duodenum, and transverse colon. A 30-fold interindividual variation in the binding level was found in each of the four organs studied, and a positive correlation between the binding levels in bronchus, colon, and duodenum was found. In human bronchus, a positive correlation was found between level of binding of benzo(a)pyrene to DNA and the amount of both benzo(a)pyrene 7,8-diol and the combined group of 3-hydroxybenzo(a)pyrene, benzo(a)pyrene 9,10-diol, and water-soluble metabolites. A significantly higher relative amount of benzo(a)pyrene tetrols and benzo(a)pyrene 9,10-diol was found by human bronchus compared to the gastrointestinal tissues, while a higher level of benzo(a)pyrene was formed by the latter. The relative distribution of benzo(a)pyrene-DNA adducts was similar in all four organs, the major DNA adduct being formed by trans-addition of anti-7,8-dihydroxy-9,10-epoxide-7,8,9, 10-tetrahydrobenzo(a)pyrene to the 2-amino group at guanine. These results indicate that the metabolism of benzo(a)pyrene by at least four different organs is qualitatively similar but that quantitative differences exist. (Author abstract) (46 Refs)

88. CHARACTERIZATION OF A NEWLY ESTABLISHED HUMAN GASTRIC CANCER CELL LINE HGT-1 BEARING HISTAMINE H2-RECEPTORS.

Laboisse CL, Augeron C, Couturier-Turpin MH, Gespach C, Cheret AM, Potet F
Laboratoire de Biologie et de Physiologie des Cellules Digestives, U 239 INSERM, Faculte de Medecine Xavier Bichat, 16 rue Henri Huchard, 75018 Paris, France
Cancer Res; 42(4):1541-1548 1982

A human gastric adenocarcinoma cell line, HGT-1, was established in vitro from thc primary tumor of a 60-yr-old patient. Histological examination of the tumor revealed a poorly differentiated adenocarcinoma. Primary tumor cells were cloned in soft agarose and gave rise to tumor colonies. The procedures enabling us to form a continuous cell line from the agarose colonies are described. The cultured cells grew as monolayers of closely apposed polygonal cells with a population-doubling time of 19.48 -1.20 (SE) hr during exponential growth at passage 59. They had an epithelial morphology. Ultrastructural studies revealed the presence of microvilli and tight junctions. The HGT-1 cell line is tumorigenic in nude mice and has a hyperdiploid karyotype with a modal number of 57 chromosomes. It exhibits numerous marker chromosomes. These human gastric epithelial cells do not secrete mucus or carcinoembryonic antigen. They exhibit functional histamine H2-receptors mediating cellular cyclic adenosine 3':5'-monophosphate production and adenylate cyclase activation. In conclusion, the use of a soft-agarose clonogenic assay permitted us to develop a cancer cell line without the problems of fibroblastic cell contamination. The existence of histamine H2-receptors on gastric HGT-1 cells stresses the importance of this line as a model for studies of regulatory mechanisms involved in gastric secretion. (Author abstract) (39 Refs)

89. NITROSATION REACTIONS OF STOMACH MUCOSAL TISSUE OF THE HUMAN AND DOG.

Rice S, Ichinotsubo D, Stemmerman G, Hayashi T, Palumbo N, Sylvester S, Nomura A, Mower H, Goldman P, Mower HF, Tannenbaum SR, Goldin BR, Fine DH, Hill MJ, Reddy BS, Hecht SS, Newmark H
Dept. Chemistry, Univ. Hawaii, Honolulu, HI, 96817
Banbury Rep; 7:185-203 1981

Gastric mucosa specimens from patients who had received hydroxyzine-HCl (HZ), diazepam (DP) and cimetidine before gastrectomy, were assayed for mutagens in Salmonella strains TA98, TA100, TA1535, and TA1537. Mutagenic activity was identified in 21/65 specimens. High pressure liquid chromatographic assays identified the mutagens as nitrosated metabolites of HZ and DP. The enzymes required to metabolize these agents were never found simultaneously in the same specimen. The antral mucosa seemed to be unique among human gastrointestinal tissues in its ability to produce nitrosated metabolites of HZ and DP. No metabolites of fenantyl were found in the human tissues. Specimens of gastric antral mucosa from dogs (without prior drug treatment) contained several mutagens, mostly of the TA98 direct-acting type, in about 20% of cases. A similar number of mutagens occurred in the lower colon mucosa. The enzymes of the canine antral mucosa were capable of nitrosating HZ, DP, and fenantyl. No mutagenic metabolites were identified when human or canine antral mucosa was incubated with cimetidine in vitro, or in the antrum of a dog treated with dinitrosocimetidine 24 hr previously, but chemically synthesized nitrosated analogs of cimetidine showed mutagenic activity in all Salmonella strains except TA98. No component of the diet or environment is known to be nitrosated by the enzyme system discovered in the human antral mucosa, but the experiments with canine tissues suggested that some dietary or environmental components probably do interact with the nitrosative metabolism of the gastric or colonic mucosa. (4 Refs)

90. SEROTONIN AND HISTAMINE PRODUCTION BY HUMAN CARCINOID CELLS IN CULTURE.

Debons-Guillemin MC, Launay JM, Roseto A, Peries J
(c/o Peries) Dept. d'Oncologie Experimentale, Unite 107 INSERM, L.O.I., Hopital Saint-Louis, 2 Place du Docteur Fournier, 75010 Paris, France
Cancer Res; 42(4):1513-1516 1982

We are reporting on the first human carcinoid cells ever cultured in vitro. These cells, termed CGP, originated from a jejunal carcinoid tumor. Before tumor resection, the 29-yr-old male patient presented high levels of blood serotonin and histamine and also of urinary serotonin and 5-hydroxyindole-acetic acid; values returned to normal 9 days after resection. CGP cells exhibit a very slow multiplication rate; generation time is about 10 days. From the first subculture, the main cytological, ultrastructural, and biochemical features of CGP cultures remain unchanged. The cells show most of the enterochromaffin cell histomorphological characteristics; for example, cytoplasmic granulations, specific of argyrophilic cells, can be seen both by electron microscopy and by light microscopy (preceded by silver impregnation). The high amounts of serotonin and histamine found by highly specific radioenzymatic assays in the supernatant of CGP cultures indicate that, after 6 mo (25 subcultures), CGP cells have retained the main metabolic characteristics of the original tumor, ie, the ability to synthesize, store, and release both serotonin and histamine. (Author abstract) (14 Refs)

91. TUMORIGENICITY AND INTERFERON PROPERTIES OF THE PLC/PRF/5 HUMAN HEPATOMA CELL LINE.

Desmyter J, De Groote G, Ray MB, Bradburne AF, Desmet V, De Somer P, Alexander J

Rega Inst., Catholic Univ. Leuven, Minderbroedersstraat 10, B-3000 Leuven, Belgium

Prog Med Virol; 27:103-108 1981

Tumor production by PLC/PRF/5 cells, an HBsAg-positive human hepatoma line, was observed in nude mice and in nude rats. Only HBsAg was expressed in the mice. In vitro, the cells were incapable of interferon induction, exogenous virus replication was sensitive to interferon, HBsAg production was resistant, and there was a marked anticellular effect of interferon. Tumor development in nude mice, however, was not inhibited by human interferon but it was inhibited by an interferon inducer. (Author abstract) (6 Refs)

92. DISTRIBUTION AND SPECIFICITY OF SEQUENCES IN POLYADENYLATED NUCLEAR RNA OF NORMAL, REGENERATING, AND NEOPLASTIC LIVER.

Fausto N, Schultz-Ellison G, Atryzek V, Goyette M

Div. Biology and Medicine, Brown Univ., Providence, RI, 02912

J Biol Chem; 257(5):2200-2206 1982

We determined the homology between nuclear RNA of normal liver and that of regenerating and neoplastic livers. Because of the very low representation of the rare class of sequences (1 copy per cell or less) in liver nuclear RNA, very high RNA/cDNA ratios (as high as 1 x 10(5)) were generally necessary to obtain maximal levels of hybridization. Complementary DNA prepared from 16-hr regenerating liver polyadenylated nuclear RNA hybridized to the same extent with its homologous RNA and with polyadenylated nuclear RNA isolated from normal liver. We prepared, through several cycles of hybridization, a cDNA probe enriched for regenerating liver polyadenylated nuclear RNA sequences. Hybridization reactions with this enriched probe demonstrated marked differences in the abundance of classes of transcripts between nuclear RNA of normal and regenerating liver. However, the data do not support the view that there is a group of nuclear RNA sequences which is present in regenerating but not in normal liver. Hybridization reactions with cDNA prepared from livers with primary tumors indicated that polyadenylated nuclear RNA from those livers differs markedly from normal liver nuclear RNA in the distribution of its sequences. We conclude that the changes in the rare sequences of polyadenylated nuclear RNA during liver regeneration result from alterations in the abundance of some RNA sequences which are present in normal liver. The same conclusion applies to nuclear RNA of livers with primary tumors but in this case it was not possible to exclude the possibility that 'tumor-specific' nuclear RNA sequences might exist. (Author abstract) (32 Refs)

93. CLASSICAL SYNDROMES IN OCCUPATIONAL MEDICINE: PATHOLOGICAL LESSONS FROM VINYL CHLORIDE ANGIOSARCOMA.

Popper H, Selikoff IJ

Stratton Lab., Mount Sinai Sch. Medicine, City Univ. New York, 10 East 102nd St., New York, NY, 10029

Am J Ind Med; 2(2):187-196 1981

Similarities in the evolution of the various stages of vinyl chloride (VC)-induced hepatic lesions in man and experimental animals are discussed. The initial lesion in man and rodents is focal proliferation of hepatocytes which show variations in size and appearance of nuclei. Increase of perisinusoidal collagen fibrils and of fat-storing interstitial cells, precursors of fibroblasts, is present. Silver impregnation visualizes the increase of reticulin fibers in circumscribed zones. The precursor lesions do not exclude the simultaneous presence of fully developed angiosarcoma (AS) in other parts of the liver. Diagnostic follow-up by radionuclide scanning, angiography, and subsequent confirmation by open liver biopsy are indicated. The proliferation of sinusoidal cells becomes more conspicuous in both man and animals, and cells with hyperchromatic spindle-shaped nuclei gradually exceed the other sinusoidal cells in number. Intralobular AS is always multicentric in rodents. Exposure of newborn rats produced mainly hepatocellular carcinoma. Trabecular AS is the more frequent form. Increased connective tissue and AS cells which invade the cords are present leading to atrophy and disappearance of hepatocytes. Solid nodules of AS often form. In humans all forms of AS are almost always multicentric discouraging surgical intervention even at early stages. VC produces a well defined histological sequence in animals and man,leading to control of exposure and avoidance of additional disease. (36 Refs)

94. HUMAN PANCREATIC ADENOCARCINOMA LINE CAPAN-1 IN TISSUE CULTURE AND THE NUDE MOUSE. MORPHOLOGIC, BIOLOGIC, AND BIOCHEMICAL CHARACTERISTICS.

Kyriazis AP, Kyriazis A, Scarpelli DG, Fogh J, Rao MS, Lepera R

Dept. Pathology, Univ. Cincinnati, 231 Bethesda Ave., Cincinnati, OH, 45267

Am J Pathol; 106(2):250-260 1982

Human pancreatic ductal adenocarcinoma line Capan-1 was studied in tissue cultur e and the nude mouse. In tissue culture, the neoplastic cells grew as large epithelial-like mucin-producing cells. Sc and ip transplantation of neoplastic cells into nude mice resulted in tumor formation characterized by marked invasiveness and distant metastases. Histologically, the tumor appeared as a well-differentiated mucin-producing adenocarcinoma morphologically resembling the tumor of origin. Chromosomal analysis showed a human karyotype with a chromosome number between 51-61. Lactate dehydrogenase and beta2-microglobulin used as tumor markers were present in both tissue culture and the serum of tumor-bearing mice. The neoplasm, which was characterized by an increased level of cAMP, had lost completely the ability to respond to secretin stimulation. The tumor grown in the nude mouse was resistant to treatment with 5-fluorouracil, behavior identical to that of the original tumor. Diphtheria toxin resulted in complete tumor destruction. Because Capan-1 tumor grown in the nude mouse shows morphologic, biologic, and biochemical characteristics similar to the tumor of origin, it may be an invaluable tool in furthering understanding of the biology of human pancreatic cancer. (Author abstract) (41 Refs)

95. COMPARATIVE STUDIES OF NEOPLASTIC RESPONSE TO A SINGLE DOSE OF NITROSO COMPOUNDS. 7. THE EFFECT OF N-NITROSOBIS (2-HYDROXYPROPYL)AMINE IN SYRIAN GOLDEN HAMSTERS.

Pour PM, Salmasi SZ

Preclinical Res., Toxicology Dept., Sandoz AG, CH-4133 Pratteln 4, Switzerland

J Cancer Res Clin Oncol; 102(3):265-269 1982

Single sc applications of N-nitrosobis(2-hydroxypropyl)amine (BHP) caused carcinogenic effects in adult Syrian golden hamsters at doses as low as 1/40 of the LD50. The tumor spectrum decreased at lower doses, which affected the pancreas more strongly than the liver, whereas higher doses exhibited a more pronounced hepatocarcinogenicity and also induced tumors in the respiratory tract, gallbladder, kidney, and vagina. These results demonstrated a potent pancreatic carcinogenic effect of BHP at the lowest dose level. Hence, the presence of BHP in the environment, even in small quantities, should be regarded as a potential hazard to human health. (Author abstract) (9 Refs)

96. REACTIONS OF VINYL CHLORIDE WITH RNA AND DNA OF VARIOUS MOUSE TISSUES IN VIVO.

Bergman K
Toxicology Lab., Natl. Food Admin., Box 622, S-751 26 Uppsala, Sweden
Arch Toxicol; 49(2):117-129 1982

The irreversible binding of 14C-vinyl chloride metabolites to RNA and DNA of mouse brain, lung, liver, kidney, spleen, pancreas, and testes after a single ip injection has been studied. Hydrolysates of nucleic acids from selected organs were separated on Aminex A6 for quantitation of alkylation products. Radioactivity in nucleic acids was registered in all of the studied organs with the exception of brain. RNA from spleen, pancreas and liver, and DNA from spleen and liver contained the highest amounts of radioactivity. In nucleic acids from spleen and pancreas, both organs of high metabolic activity, the entire radioactivity was found metabolically incorporated as C1-fragments. In RNA of kidney and liver, a large part of the radioactivity was also present as incorporated C1-fragments, but 3,N4-ethenocytidine (in kidney) as well as 1,N6-ethenoadenosine and 1,N6-ethenoadenine (in kidney and liver) were identified as alkylation products. In liver DNA, incorporation of C1-fragments was insignificant, indicating different interactions of vinyl chloride metabolites (C1-fragments and alkylating products) with RNA and DNA. The elution profiles of radioactivity in hydrolysates of liver DNA were dominated by an alkylation product of unknown structure (probably a derivative of deoxyguanosine). Possibly, 1,N6-ethenodeoxyadenosine and 1,N6-ethenoadenine were also present in liver DNA. The results are consistent with the ability of viny chloride to act as a multipotent carcinogen by alkylation of DNA in several tissues. (Author abstract) (45 Refs)

☆ U. S. GOVERNMENT PRINTING OFFICE : 1982—361-847/122

AUTHOR INDEX WITH CITATION NUMBERS

Abe T 26
Aibe T 3
Akovbiantz A 64
Alexander J 91
Altorfer J 64
Amar SS 2
Apfeldorf R 76
Ariyama S 3
Atkinson M 2
Atryzek V 92
Augeron C 88
Autrup H 87
Azuma M 3
Bache JB 58
Balfour TW 2
Balistreri WF 82
Balthazar EJ 5
Barin F 31
Barin F 65
Barin F 66
Barin F 67
Barin F 68
Bassendine MF 25
Bell GD 2
Bellezza MA 35
Benson EA 23
Bentick B 58
Bergman K 96
Berjian RA 35
Blievernicht SW 40
Bodner E 18
Bongiorno FP 57
Bougnoux P 30
Bradburne AF 91
Bradshaw E 84
Brandt L 83
Brennan MF 56
Bronstein B 20
Brooks J 35
Bruce WR 74
Bruce WR 86
Bruckner HW 35
Brugh M 87
Brunner K 16
Buhler H 64
Burt ME 56
Buzby GP 55
Caldwell GG 75
Caldwell GG 77
Cameron JL 39
Carson JM 35
Chapman RW 25
Chen H 14
Chen Q 17
Cheret AM 88
Chiron JP 29
Chiron JP 31
Chiron JP 65
Chiron JP 66
Chiron JP 67
Chiron JP 68
Chotard J 67
Chu CP 62
Chuang VP 54
Clark CS 82
Cocks JR 63
Conroy RM 41
Correa P 78
Correa P 86
Coursaget P 29
Coursaget P 30
Coursaget P 31
Coursaget P 65
Coursaget P 66
Coursaget P 67
Coursaget P 68
Couturier-Turpi 88
Cowan JD 52
Crowley S 77
Cunha-Melo JR 59
De Groot EH 36
De Groote G 91
De Somer P 91
DeCosse JJ 49
Debons-Guillemi 90
Denis F 29
Denis F 31
Denis F 65
Denis F 66
Denis F 67
Denis F 68
Desmet V 91
Desmyter J 91
Dilawari RA 48
Dinges HP 19
Diop B 31
Diop B 68
Diop Mar I 29
Diop Mar I 31
Diop Mar I 65
Diop Mar I 66
Diop Mar I 67
Dolle W 85
Dotan J 45
Dougherty SH 61
Douglass HO 35
Dronfield MW 2
Drucker J 29
Drucker J 31
Dubois F 30
Duncan JG 51
Earlam R 59
Easler RE 42
Easterbrook J 52
Edwards KC 41
Eisenberg M 61
Elia VJ 82
Ericsson M 53
Fabry TL 11
Falk H 75
Falk H 77
Fankhauser S 24
Fausto N 92
Filippa DA 49
Fine DH 89
Finlay IG 51
Flavell DJ 60
Fleming ID 48
Fogh J 94
Foster CA 61
Frankel A 11
Fraumeni JF 71
Fresko D 45
Fuji T 3
Gartside PS 82
Gastrointestina 35
George PK 20
Gespach C 88
Gips CH 36
Gips CH 37
Goldhirsch A 16
Goldin BR 89
Goldman P 89
Gorman A 25
Gorschboth CM 56
Gottfried EB 44
Gottschild D 7
Goudeau A 29
Goudeau A 30
Goudeau A 31
Goudeau A 65
Goudeau A 66
Goudeau A 67
Goudeau A 68
Goyette M 92
Grafstrom RC 87
Gray HW 51
Gu Y 14
Gunderson LL 12
Hahn RG 35
Halperin ST 78
Hammer A 22
Hanis NM 70
Harima K 3
Harington JS 84
Harper TG 42
Harris CC 87
Haugen A 87
Hayashi K 3
Hayashi T 89
Hecht SS 89
Heitz PU 24
Hemmingsson A 9
Herbert J 77
Hill MJ 89
Hoffbrand AV 25
Holdaway IM 23
Holmes TM 70
Honma A 33
Horsley JS 40
Houthoff HJ 37
Hu J 14
Huang Z 38
Hutchison JM 8
Ichida F 33
Ichinotsubo D 89
Iida Y 3
Ikuta F 32

Infante PF 76
Ishak KG 75
Ishak KG 77
Itaya S 71
Ito Y 10
Jacobson G 9
Jelinek R 19
Jetha N 50
Johnson K 35
Jones KE 70
Joss R 16
Kabakow B 35
Kaibara N 15
Kane RA 6
Kano T 10
Kasugai T 10
Kawamura S 3
Kawashima M 3
Keller U 24
Key CR 79
Kido C 10
Kimura O 15
Kishimoto H 15
Knapp DR 2
Knowlton A 35
Koff RS 20
Koga S 15
Kozuka S 27
Krementz ET 78
Krom RA 36
Krom RA 37
Kuno N 10
Kurimoto K 10
Kurokawa K 4
Kyriazis A 94
Kyriazis AP 94
LaRusso NF 47
Laboisse CL 88
Landrigan PJ 73
Langman MJ 2
Laulicht M 25
Launay JM 90
Lawrence W 40
Lazarus SS 45
Lechner JF 87
Ledford DK 43
Lee YT 1
Lepera R 94
Leskiw MJ 55
Lewis GJ 41
Li C 38
Li R 14
Lieber CS 44
Lieberman PH 49
Lin J-H 69
Lindgren PG 9
Lipkin M 86
Liu Z 38
Livestone EM 35
Lo KW 21
Loewenstein MS 20
Lokich JJ 35
Lonnerholm T 9
Lorelius LE 9
Louria DB 72
Lu Y 14
Ludwig J 47
Lunderquist A 53
Lyon JL 80
MacFarlane JK 34
Madamba MR 5
Madariaga J 40
Maetani N 3
Magee PN 74
Majeti VA 82
Mallard JR 8
Maranta E 64
Marsh J 35
Martinez I 81
Maruyama M 4
Matsuura A 10
Maupas P 29
Maupas P 30
Maupas P 31
Maupas P 65
Maupas P 66
Maupas P 67
Maupas P 68
Mayer RJ 35
McArdle CS 51
McCracken JD 52
McGlashan ND 84
McIlrath D 35
McPeak CM 69
Meek DR 51
Melton LJ 62
Mercer JL 58
Meyer CR 82
Miller AM 72
Milliran S 35
Mills GM 52
Mitchell MS 35
Mitchell S 48
Mitzkat HJ 22
Moertel CG 35
Moran EM 41
Moure-Eraso R 71
Mower H 89
Mower HF 89
Mullen JL 55
N'Diaye PD 29
N'Doye R 67
Nagai K 3
Nagasawa S 27
Nagatomi Y 3
Nanji AA 50
Naujoks-Heinric 85
Nava HR 35
Neifeld JP 40
Neumann G 7
Newmark H 89
Nime F 35
Nishidoi H 15
Nobin A 53
Nomura A 89
Nordgren CE 9
O'Brien MJ 20
O'Connell MJ 35
Ogbadu GH 28
Ohama E 32
Okamoto T 15
Olsson H 83
Onyemelukwe GC 28
Oshita Y 3
Ota Y 4
Otten G 22
Palumbo N 89
Palumbo PJ 62
Parham DM 43
Paronetto F 44
Patel RM 46
Peries J 90
Perrin J 65
Perrin J 66
Perrin J 67
Perrin J 68
Phelan K 34
Pickern J 35
Pinkston GR 43
Piorkowski RJ 40
Pirovino M 64
Popper H 75
Popper H 77
Popper H 93
Potet F 88
Pour PM 13
Pour PM 95
Powrie WD 74
Pribram HF 41
Purow E 46
Raghavendra BN 5
Ragozzino M 62
Ramming KP 35
Rao MS 94
Ray MB 91
Raynaud B 31
Reddy BS 89
Reid A 8
Reingold M 45
Rice S 89
Ropka M 35
Roseto A 90
Rosin MP 74
Rubin J 35
Salifu A 28
Salmasi SZ 95
San RH 74
Sanden G 53
Sarr MG 39
Sasayama T 3
Sayed G 13
Sayed S 13
Scanzano R 34
Scarpelli DG 94
Schmid M 64
Schultz-Ellison 92
Schumacher A 24
Schutt AJ 35
Schuur KH 37
Selikoff IJ 93
Sellner F 19
Shahbazian AA 41
Shallenberger L 70
Sheffet A 72
Shenouda G 34
Sherlock P 49
Sherlock S 25
Shibasaki K 33
Shimizu M 3
Shiratori K 4
Smith FW 8
Soga K 33
Sosin H 12

Specker B 82
Sperling HV 42
Standke E 7
Stein TP 55
Steller R 44
Stemmerman G 89
Stich HF 74
Storch J 35
Straus D 49
Subramanyam BR 5
Sugihara Y 10
Suzuki H 4
Sweeney PM 35
Swingle KF 41
Sylvester S 89
Takemoto T 3
Takemoto T 4
Taki T 27
Tamura H 15
Tanabe M 3
Tanehiro K 10
Tang Z 17
Tannenbaum SR 74
Tannenbaum SR 86
Tannenbaum SR 89
Terz JJ 40
Thind I 72
Thomas HC 25
Thomas LB 75
Thomas LB 77
Thomas TL 71
Thomson DM 34
Thursby MW 69
Tong MJ 69
Trimble ER 24
Trump BF 87
Tschopp L 16
Tsou KC 21
Tsubone M 27
Van Soest PJ 74
Vellacott KD 2
Wallace S 54
Watanabe S 4
Watson JD 74
Wattenberg LW 74
Waxweiler RJ 71
Waye JD 11
Weiland L 35
Weingrad DN 49
Weissman JY 69
Weitzel M 64
Wellbaecher RG 78
Wiesner RH 47
Wilkins TD 74
Wilkins TD 86
Wright HK 35
Wu CH 74
Yang J 14
Yoda Y 26
Yu Y 17
Zamcheck N 20
Zhou X 17
Zick R 22

INTERNATIONAL CANCER RESEARCH
DATA BANK

Compilation of Experimental Cancer Therapy Protocol Summaries

COMPLIMENTARY COPIES
NOW AVAILABLE

April 1982
Sixth Edition

CONTENT

This document contains summaries of over 1200 open experimental clinical cancer therapy protocols from countries around the world.

Open protocols are arranged in sections according to the specific type of cancer.

Protocols closed in 1981 are listed by title, number, and investigator in a separate section.

INDEXES

- Tumor index
- Agent/Modality index
- Protocol identification number index

Request for 1982 COMPILATION.
(Print Clearly for use as mailing label)

Name: ______________________________

Address: ______________________________

____

City/State/Zip: ______________________________

Country: ______________________________

Mail to:
Compilation Request
ICRDB Program
National Cancer Institute
Westwood Building Room 10A18
Bethesda, Maryland 20205

CANCER INFORMATION? CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · CANCERLINE · JUST MENTION OUR NAME

Mention CANCERLINE to your librarian and the world's foremost collection of cancer information is at your disposal. With the help of this computerized data system, you can obtain information on the following:

Cancer Literature

The literature date base, **CANCERLIT**, allows you to survey more than 3,000 biomedical journals for information on your topic of interest. Your search will also alert you to meeting proceedings, monographs, and books published in that area. Informative abstracts averaging 200 words are provided with each citation;

Current Cancer Research

The data base **CANCERPROJ** allows you to retrieve descriptions of current work in any cancer research area. The descriptions, which state research objective, methodology, and experimental results, are supplied for projects underway in 77 countries around the world.

Cancer Therapy Protocols

The **CLINPROT** section of CANCERLINE is designed primarily for clinicians. It provides detailed summaries of currently active experimental protocols for any cancer site, agent, or type.

Ask your biomedical librarian about CANCERLINE.

CANCERLINE is sponsored by the International Cancer Research Data Bank—a program of the National Cancer Institute.

CANCERLINE

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

U.S.MAIL

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

Ct 19/82/08

NCI/ICRDB/CT19 82/08

NEWARK PUBLIC LIBRARY

PB82-939408

OCT 5 1982
U. S. GO
DEPOSITORY 376

ICRDB CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/08

AUGUST, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

VISIT THE ICRDB EXHIBIT AT THE INTERNATIONAL CANCER CONGRESS IN SEATTLE, SEPTEMBER 8-15: MEET THE ICRDB STAFF, FIND OUT WHAT'S NEW, AND GET A FREE CANCERLINE SEARCH ON THE SPOT.

In this issue:

- **SCREENING AND DIAGNOSIS** 1-5
- **PATHOLOGY, STAGING, AND PROGNOSIS** 6-11
- **BIOCHEMICAL AND IMMUNOLOGIC MARKERS** 12-23
- **SURGICAL AND RADIATION THERAPY** 24-30
- **SELECTED CLINICAL CORRELATIONS** 31-32
- **REHABILITATION ASPECTS** 33
- **SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER** 34-45
- **SELECTED PRE-CLINICAL STUDIES** 46-50

SCREENING AND DIAGNOSIS

1. SONOGRAPHY OF THE BILE DUCTS AFTER A FATTY MEAL: AN AID IN DETECTION OF OBSTRUCTION.

Simeone JF, Mueller PR, Ferrucci JT, VanSonnenberg E, Hall DA, Wittenberg J, Neff CC, O'Connell RC
Dept. Radiology, Massachusetts General Hosp., Boston, MA, 02114
Radiology; 143(1):211-215 1982

The sonographic response of the biliary tree to a fatty meal was assessed in 78 individuals by measuring common hepatic duct caliber before and after fat ingestion. In the normal cases, the common hepatic duct remained the same or decreased in caliber. Abnormal responses consisted of a normal-caliber duct that increased in size or a slightly dilated duct that remained

HE 20.3173/2:

the same or increased in size. By employing these criteria, we discovered patients with ampullary stenosis, common duct stones, cholangiocarcinoma, and chronic pancreatitis. It is concluded that biliary sonography after ingestion of a fatty meal can aid in the evaluation of a common hepatic duct that is equivocally or midly dilated and can indicate the need for further invasive studies. (Author abstract) (6 Refs)

2. COMPUTED TOMOGRAPHY OF THE PANCREAS: THREE SECOND SCANNING VERSUS 18 SECOND SCANNING.

Levitt RG, Stanley RJ, Sagel SS, Lee JK, Weyman PJ
Mallinckrodt Inst. Radiology, Washington Univ. Sch. Medicine, 510 So. Kingshighway Blvd., St. Louis, MO, 63110
J Comput Assist Tomogr; 6(2):259-267 1982

Diagnostic accuracy of pancreatic computed tomography (CT) using a 3 s scanner was compared to our previously published results using an 18 s scanner. Technically unsuccessful examinations have decreased to less than 1%. Pancreatic masses were detected prospectively in 83% of patients with pancreatic carcinoma and retrospectively in all such patients. False negative diagnoses of normal pancreas in proven pancreatic carcinoma were reduced fourfold down to 6%. False positive diagnoses of pancreatic carcinoma remained less than 1% but were not significantly reduced compared to our 2nd yr experience using an 18 s scanner. Interpretation errors and errors due to limitations of CT as a diagnostic technique are discussed. (Author abstract) (18 Refs)

3. BILIARY TRACT CHOLESCINTIGRAPHY USING TECHNETIUM-99M-LABELED DISOFENIN.

Matolo NM, Stadalnik RC
Dept. Surgery, Univ. California, 4301 X St., Room 257, Sacramento, CA, 95817
J Surg Res; 32(3):202-207 1982

Technetium-99m-labeled disofenin is a new iminodiacetic acid analog for imaging the biliary tract and the gallbladder. Biliary cholescintigraphy with 99mTc-disofenin was performed on 148 patients referred for evaluation of hepatobiliary tract disease. Four millicuries was administered intravenously to nonjaundiced patients and 7 mCi to jaundiced patients. Scintigraphy was performed on patients in supine position and was accomplished via large-field-of-view camera with a low-energy, all-purpose collimator. Technetium-99m-labeled disofenin rapidly cleared the blood which permitted excellent images of the biliary system with minimal interference from renal activity in only 11% of the patients. Of the 34 patients confirmed operatively and histologically to have acute cholecystitis, 32 had positive 99mTc-disofenin cholescintigram, a sensitivity rate of 94%. Only two of the eight patients with chronic cholecystitis had positive scan with nonvisualization of the gallbladder. This is not surprising, since scintigraphic study may be normal in patients with chronic cholecystitis if the cystic duct is patent. A normal biliary tract was detected in 63% of our jaundiced patients (25/40), thus excluding biliary tract disease. Radioactivity was definitely identified in the gastrointestinal tract when the serum bilirubin level was as high was 27.3 mg/100 ml, thus differentiating hepatocellular disease from complete extrahepatic biliary tract obstruction. However, in six patients (15%), 99mTc-disofenin cholescintigram could not differentiate between liver disease and biliary tract obstruction. It is concluded that 99mTc-disofenin has rapid blood clearance, which permits satisfactory images of the biliary system in a variety of hepatobiliary diseases encountered in routine clinical practice. It is particularly sensitive in the diagnosis of acute cholecystitis. (Author abstract) (20 Refs)

4. THE ROLE OF POSITRON EMISSION TOMOGRAPHY IN THE DETECTION OF PANCREATIC DISEASE.

Syrota A, Duquesnoy N, Paraf A, Kellershohn C

Service Hospitalier Frederic Joliot, Hopital d'Orsay, 91400 Orsay, France

Radiology; 143(1):249-253 1982

Positron emission tomography (PET) was used to assess possible pancreatic disease in 100 patients. Following injection of 10-15 mCi (370-740 MBq) of 11C-L-methionine, 4-12 transverse sections 2 cm thick were obtained. In 85 patients with a definite diagnosis (45 normal, 9 acute pancreatitis, 18 chronic pancreatitis, and 13 cancer), PET showed a sensitivity of 85.0%, a specificity of 97.8% and an accuracy of 91.8%, higher than with transmission computed tomography (CT) or ultrasonography, despite relatively low spatial resolution; this can be explained by the fact that exocrine pancreatic function was altered prior to morphological change. In 22 normal subjects, 0.011 +-0.003% (mean +- SD) of injected 11C was found in 1 ml of liver tissue and 0.015 +-0.005% in 1 ml of pancreatic tissue; the pancreas-to-liver concentration ratio was 1.3 +-0.4. Hepatic 11C concentration was identical in the four groups of patients. Pancreatic uptake of 11C-L-methionine was significantly lower in patients with chronic pancreatitis (n = 13) and pancreatic carcinoma (n = 10) (p less than 0.001); however, it was not possible to distinguish cancer from chronic pancreatitis because the same functional alteration occurred in both. (Author abstract) (23 Refs)

5. ROENTGENOLOGIC DIAGNOSIS OF DISEASES OF THE PANCREAS.

Bucheler E, Montgomery FU, Grabbe E

(c/o Montgomery) Radiologische Klinik, Universitatskrankenhaus Hamburg Eppendorf, Martinistrasse 52, D-2000 Hamburg 20, W. Germany

Internist (Berlin); 23(2):82-88 1982

The applicability and value of selected roentgenologic procedures for diagnosis of diseases of the pancreas are discussed. The use of sonography, computer tomography (CT), (ERCP), percutaneous transhepatic cholangiography (PTC), and angiography is emphasized. Specific diseases of the pancreas, including malignant tumors, are described with regard to clinical symptoms, methods of choice for diagnosis, roentgenologic characteristics, and differential diagnosis. The accuracy of sonography, CT, ERCP, PTC, and angiography are compared with regard to the diagnosis of carcinoma of the pancreas. The value of sonographically- guided aspiration biopsy in establishing a diagnosis of carcinoma is considered. It is noted that endoscopy with cytologic examination and biopsy is the method of choice for diagnosing papillary carcinoma of the pancreas, while angiography is the most valuable procedure for the diagnosis of islet cell tumors. It is concluded that sonography is important in initial examinations of patients with pancreatic diseases, that ERCP with cytologic examination allows differentiation of pancreatitis and pancreatic cancer, and that angiography is valuable in determining the resectability of a tumor. (35 Refs) (In GER)

PATHOLOGY, STAGING, AND PROGNOSIS

6. METASTATIC SPREADING OF SUPERFICIAL CANCER OF THE STOMACH.

Slesareva IuG, Rottenberg VI, Fridman EG
Center Oncology Res., USSR Acad. Medical Sciences, Moscow, USSR
Vopr Onkol; 28(1):20-23 1982

The report deals with the results of the follow-up of 158 cases of superficial cancer of the stomach (located between mucous membrane and submucosal layer). Metastases into regional lymph nodes were detected during surgery in 15 cases (11%). A 5-yr survival following radical surgery was registered in 50% of patients with metastases of superficial cancer into regional lymph nodes, it being 86% in cases without regional metastases. Metastases may appear as a concomitant feature of cancer still within the bounds of mucous membrane and submucosal layer and tumors less than 2 cm in diameter as well as all other gross anatomical forms of superficial cancer of the stomach. Therefore, superficial cancer of the stomach with metastases into regional lymph nodes cannot be regarded as an early form of cancer. (Author abstract) (6 Refs) (In RUS)

7. PRECANCEROUS CONDITIONS AND CANCER OF THE STOMACH.

Duris I, Koska M, Zaviacic M, Mikulecky M, Holly D
Katedra internistickych disciplin, I Lekarska fakulta Univerzity Komenskeho, Mickiewiczoya 13, 88421 Bratislava, Czechoslovakia
Bratisl Lek Listy; 76(5):540-551 1981

Precancerous conditions and cancer of the stomach were studied in 4,159 patients subjected to gastroscopy. The histological diagnosis was that of gastric polyps in 112 patients, atrophic gastritis with intestinal metaplasia (AGIM) in 190, and gastric cancer in 103, including intramucosal carcinoma in 9. All patients with gastric carcinomas were in the age bracket 20-90 yr, and the frequency was higher among men than among women in all age groups. The incidence of AGIM was higher among women than among men in the age group 40-70 yr, especially in the age group 50-60 yr. Gastric cancer was found to occur at a significantly higher age among agricultural workers than in the other occupational groups. Concurrent disease as risk factor was found in 47% of 42 patients with gastric xanthomas. Gastric stump carcinoma was found in 23% of the patients subjected to gastric resection for gastric or duodenal ulcer. Forty-two parameters were studied in the gastric cancer patients and in patients without this disease by the pattern recognition method. Consumption of garlic, onions, home made smoked meat, as well as persistent emotion of fear were found to be linked most closely with gastric cancer. Restriction of burnt food and consumption of generous amounts of fruits and vegetables appear to be beneficial against gastric cancer. (41 Refs) (In SLO)

8. CARCINOID TUMORS OF THE GASTROINTESTINAL TRACT. TUMORAL PATHOLOGY OF THE DIFFUSE ENDOCRINE SYSTEM OF THE GASTROINTESTINAL TRACT.

Wallon J, Rahier J, Noel H, Hoat J
Service d'Anatomie Pathologique, Cliniques Universitaires Saint-Luc, Avenue Hippocrate 10, B-1200 Brussels, Belgium
Rev Fr Gastroenterol; (174):45-51 1981

There are listed eight endocrine cell types which secrete peptides hormones and biogenic amines in the gastrointestinal system. The identification of these cell types is based on ultrastructural bases. Like other cellular systems, the diffuse endocrine system can present several modes of pathological proliferation. One can distinguish simple hyperplasia, micro-invasive tumors (microcarcinoids) and invasive proliferation (carcinoid tumors). Microcarcinoids never invade beyond the muscularis mucosa (MM). The infiltration of the MM constitutes a major criterion in the differential diagnosis between noninvasive and invasive forms. Histochemical analysis provides the basis of a diagnosis when routine macroscopic and microscopic analysis have led to the suspicion of an endocrine tumor. It has not yet been possible to establish a classification for endocrine type tumors based on their peptide secretion because numerous tumors contain several cell types which secrete different hormones even though there is often a predominant secretion type. Also, specific antibodies for all the digestive hormones have not yet been developed and it is not yet possible to characterize the precise manner of secretion of each tumor. (16 Refs) (In FRE)

9. ADENOCARCINOMA OF THE SMALL INTESTINE ASSOCIATED WITH CROHN'S DISEASE. AN ELECTRON MICROSCOPIC STUDY.

Balazs M

Korbonctani Osztaly, Fovarosi Tanacs Janos Korbaza, Diosarok u. 1, 1125 Budapest, Hungary

Morphol Igazsagugyi Orv Sz; 22(1):5-13 1982

Electron microscopic examinations of surgical specimens from a 34-yr-old man with Crohn's disease associated with adenocarcinoma of the ileum revealed disturbed maturation of epithelial cells in the mucosa vicinal to the tumor, similar to that seen in precancerous colonic mucosa. The adenocarcinoma cells appeared to be less differentiated than expected based on the light microscopic picture. Large numbers of dense spherical bodies, considered to be a sign of pathological mucus secretion, were seen in the tumor cells. Presence of similar bodies was reported in the cells of colonic carcinoma and in gastric carcinoma of intestinal type. Some tumor cells contained peculiar intracisternal, parallelly arranged inclusions, analogous to those seen in the cells of malignant melanoma and osteosarcoma. Further investigations are needed to clarify the origin, significance and diagnostic value of these inclusions. (47 Refs) (In HUN)

10. EARLY DIAGNOSIS OF GASTRIC CANCER: REALITY OR ILLUSION?.

Caduff B, Ruedi Th, Hartmann G, Buhler H, Buchmann P, Heim U, Schmutziger P, Kobler E

(c/o Kobler) Medizinische Klinik, Kantonsspital, CH-7000 Chur, Switzerland

Schweiz Med Wochenschr; 112(15):526-528 1982

Cancer of the stomach is, in Switzerland, the fourth most common malignant tumor in both sexes. The 5 yr survival rate is between 10 and 20% in Europe; where the cancer is diagnosed early, however, the patients have a survival rate of 85-95%. Of the 305 cases diagnosed in the last 5 yr, 51.5% were operatively curable. In 29.5% of the cases palliative surgery was possible and 19% were inoperable. The rate of early cancer is 12% and thereby constitutes the largest portion of the total 5 yr survival rate. Improvement of prognosis is only realizable through early detection, but even today this prospect is largely illusory. Practicable ways of obtaining optimum results are demonstrated. (Author abstract) (3 Refs) (In GER)

11. RESULTS OF GASTRIC CARCINOMA SURGERY.

Peters H

Abt. Chirurgie, Med. Fakultat der RWTH, Goethestrasse 27/29, D-5100 Aachen, W. Germany

Med Welt; 33(6):207-209 1982

Therapeutic and prognostic problems associated with the occurrence of cancer of the stomach are illustrated through a retrospective study of 664 patients who underwent surgical treatment of this type of cancer. Advanced cancer was present in 662 patients. At the time of diagnosis or surgery, 518 patients had evidence of metastases. Twenty-six patients had carcinoma of the gastric stump. A total of 304 patients underwent radical surgical procedures. The surgical lethality rate was 11.1% for the 208 patients who underwent subtotal partial resection and 22.9% for the 96 patients who underwent gastrectomy. Postoperative complications occurred in 45/208 partial-resection patients and 55/96 in gastrectomy patients. The rates of lethality and complications were higher in older patients. Follow-up data were available for 137 patients. The 5-yr survival rates for 123 patients with advanced cancer were 3.5% following gastrectomy and 18.1% following partial resection. Corresponding 5-yr survival rates for 14 patients with early cancer 100% and 83.3%. Relapses occurred in 107 patients; recurrence of the cancer was either local (42 patients) or extragastric (65 patients). It is concluded that all gastric cancers, even those detected in the early stages, should be viewed as systemic diseases. It is suggested that screening and improved diagnosis of early gastric cancer are important factors necessary to improve the prognosis associated with this disease. (17 Refs) (In GER)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

12. ALPHA1-FETOPROTEIN AND TENNESSEE ANTIGEN IN HEPATOCELLULAR CARCINOMAS AND IN METASTATIC LIVER CANCER.

Polterauer P, Muller M

II. Universitatsklinik fur Gastroenterologie und Hepatologie, Garnisongasse 13, A-1090 Wien, Austria

Wien Klin Wochenschr; 94(4):102-105 1982

Alpha-1-fetoprotein (AFP) and Tennessee antigen (TA) were evaluated in sera of 23 patients (15 men, 8 women; 24-78 yr old) with histologically confirmed hepatic carcinoma [15 had malignant hepatomas (MH) in liver free of cirrhosis, 3 had MH associated with alcoholism, 2 had MH after hepatitis, 1 each had MH associated with hemochromatic liver, cryptogenic liver cirrhosis, and chronic aggressive hepatitis], and 20 patients (10 men, 10 women; 35-78 yr old) with histologically confirmed hepatic metastases (HM) from primary cancers (12 colorectal, 2 gastric, 2 salivary gland, 1 each pulmonary, mammary, bladder, and thyroid). Radioimmunoassay was used for determination of AFP with normal values up to 9 nanog (ng)/ml, suspicious for MH greater than 174 ng/ml, and diagnostic for MH greater than 6074 ng/ml. Inhibition of hemoagglutination was used for measuring the TA with normal values up to 7.7 units/ml. AFT values were elevated in 87% of the patients with MH and 65% had values that were suspicious for MH. TA values were elevated in 87% of the patients with MH, but the TA values were in normal range in 85% of the patients with HM. (7 Refs) (In GER)

13. ENZYMES OF COLLAGEN SYNTHESIS AND TYPE III PROCOLLAGEN AMINO-PROPEPTIDE IN SERUM FROM NIGERIANS WITH HEPATOCELLULAR CARCINOMA AND OTHER MALIGNANT DISEASES.

Bolarin DM, Savolainen ER, Kivirikko KI

(c/o Kivirikko) Dept. Medical Biochemistry, Univ. Oulu, SF-90220 Oulu 22, Finland

Int J Cancer; 29(4):401-405 1982

Serum immunoreactive prolyl hydroxylase protein (S-IRPH), galactosylhydroxylysyl glucosyltransferase activity (S-GGT) and the amino-terminal propeptide of Type III procollagen [S-Pro(III)-N-P] were studied in 24 patients with primary hepatocellular carcinoma, 18 with secondary liver neoplasms and 35 with other malignant diseases but no evidence of liver involvement; this latter group included 13 patients with Burkitt's lymphoma, 11 with breast cancer and 11 with other neoplasms. Control values were determined for 60 apparently healthy Nigerians. S-IRPH and S-GGT were above the upper normal limit, defined as the mean +2 SD of the controls, in all the patients with primary hepatocellular carcinoma and all but one with secondry liver neoplasms, whereas only one S-IRPH value and three S-GGT values exceeded this limit in the patients with other malignant diseases. The mean S-Pro(III)-N-P was even more elevated than S-IRPH and S-GGT in the primary and secondary liver neoplasm cases, but was also elevated in other malignant neoplasms; about one third of the patients with no evidence of liver involvement had a concentration exceeding the upper normal limit. A high correlation was found between the values for the three assays both in primary hepatocellular carcinoma and in the whole series of malignant diseases. The data suggest that primary and secondary malignant neoplasms of the liver have a high rate of collagen synthesis. The three assays may be of some value in the diagnosis of primary hepatocellular carcinoma and secondary liver involvement in other malignant diseases, and in monitoring the treatment provided. (Author abstract) (22 Refs)

14. DIAGNOSIS OF THE SITE OF INSULINOMAS: PERCUTANEOUS TRANSHEPATIC PORTAL VEIN CATHETERISATIONS WITH SELECTIVE BLOOD SAMPLING FOR HORMONE DETERMINATION.

Beyer J, Cordes U, Gunther R, Georgi M, Thelen M, Kummerle F, Happ J, Krause U

Abteilung innere Medizine, Endokrinologie und Stoffwechsel, Stadtische Krankenanstalten, 6800 Mannheim 1, Theodor-Kutzer-Ufer, W. Germany

Dtsch Med Wochenschr; 107(6):205-208 1982

Percutaneous transhepatic portal vein catheterization with blood sampling from the various areas of drainage, especially the pancreatic veins, was undertaken in seven patients with insulinoma to diagnose its site. In six patients measurement of serum-insulin levels revealed an abrupt rise in the vascular area later found to drain the area of the insulinoma. Insulin measurement in one patient with insulinoma in the head of the pancreas falsely indicated an islet-cell tumor in the region of the tail of the pancreas. C-peptide concentration in serum followed the concentration of insulin, but did not show such a marked rise. The method of percutaneous transhepatic portal vein catheterization with selective blood sampling for the measurement of hormonal concentration was superior to ultrasound, computer tomography or coeliacography for determining the site of the tumor. (Author abstract) (25 Refs) (In GER)

15. LABORATORY DIAGNOSIS OF GASTRINOMA. I. A PROSPECTIVE EVALUATION OF GASTRIC ANALYSIS AND FASTING SERUM GASTRIN LEVELS.

Malagelada JR, Davis CS, O'Fallon WM, Go VL
Gastroenterology Unit, Mayo Clinic, Rochester, MN
Mayo Clin Proc; 57(4):211-218 1982

In a small percentage of patients with ulcer disease, a gastrinoma may be ultimately discovered. In most institutions, a fasting serum gastrin determination and gastric analysis are used as first-line tests to identify this subgroup of patients with ulcer disease. The blood test is relatively inexpensive and well accepted by patients. Gastric analysis is uncomfortable and requires a well-equipped facility staffed by skilled personnel. A prospective study designed to assess the diagnostic usefulness of these tests and particularly, whether combining both tests adds to the individual value of each, revealed that gastric analysis does not improve the diagnostic ability of the fasting serum gastrin tests. Therefore, gastric analysis probably is not indicated for determining whether a patient with active ulcer disease has a gastrinoma. The fasting serum gastrin test will suffice, and abnormal values on this test should be verified by the use of other tests such as response to gastrin provocative tests. (Author abstract) (15 Refs)

16. LABORATORY DIAGNOSIS OF GASTRINOMA. II. A PROSPECTIVE STUDY OF GASTRIN CHALLENGE TESTS.

Malagelada JR, Glanzman SL, Go VL
Gastroenterology Unit, Mayo Clinic, Rochester, MN
Mayo Clin Proc; 57(4):219-226 1982

A prospective study of the value of secretin, calcium, and meal gastrin challenge tests for the diagnosis of gastrinoma indicated that the secretin test may be valuable. The calcium test was equally valuable, but it cannot be recommended as enthusiastically because it is time-consuming and may cause side effects. New criteria for interpretation of these tests were based on peak responses to the challenge. Further, this study revealed that patients with hypochlorhydria and hypergastrinemia could be identified without the use of gastric analysis. This prospective study reflects the current pattern of clinical practice at a referral institution where patients with gastrinoma, an unusual condition, are seen with regularity. The criteria we propose for interpretation of these tests are simple and could be applied to individual patients in whom a gastrinoma is suspected. (Author abstract) (18 Refs)

17. DIAGNOSIS AND MANAGEMENT OF GASTRINOMA (ZOLLINGER-ELLISON SYNDROME).

Clain JE
Div. Gastroenterology and Internal Medicine, Mayo Clinic, Rochester, MN
Mayo Clin Proc; 57(4):265-267 1982

Comments are presented on two accompanying papers in this journal on diagnosis of gastrinoma. One study confirmed that gastrin challenge tests distinguish patients with gastrinoma from those with duodenal ulcer disease (DUD). The peak gastrin value after secretin was the best indicator rather than absolute or percentage increase over fasting serum gastrin levels. At a level of 500 picog/ml of gastrin, there was 100% separation between 25 patients with gastrinoma and 15 with DUD. (24 Refs)

18. SCIRRHOUS ARGYROPHIL CELL CARCINOMA OF THE STOMACH WITH MULTIPLE PRODUCTION OF POLYPEPTIDE HORMONES, AMINE, CEA, LYSOZYME, AND HCG.

Tahara E, Ito H, Nakagami K, Shimamato F, Yamamoto M, Sumii K
Dept. pathology, Hiroshima Univ. Sch. Medicine, Kasumi 1-2-3, Minami-ku, Hiroshima 734, Japan
Cancer; 49(9):1904-1915 1982

Sixteen argyrophil cell carcinomas in 59 gastric scirrhous carcinomas were examined histologically, ultrastructurally, and immunohistochemically for polypeptide hormones, CEA, lysozyme, and HCG. In 9 of these 16 tumors, polypeptides such as gastrin, somatostatin, and glucagon were demonstrated. Six of these nine tumors contained all three hormones, and three of these six tumors also had argentaffin cells. In all of these 16 tumors CEA were observed. Eight of them had CEA, lysozyme, and acid mucin synchronously. Of the above six tumors containing three peptides, three produced focal HCG. Ultrastructurally, several types of secretory granules were noted. Histologically, these 16 tumors showed poorly differentiated adenocarcinomas or signet ring cell carcinomas. Macroscopically, generalized type was 11 and localized type 5. No hormonal syndrome was detected in any of the patients. It was suggested that these scirrhous argyrophil cell carcinomas of the stomach with the multifunction originate from totipotent immature cells of endodermal origin. (Author abstract) (46 Refs)

19. PANCREATIC ENDOCRINE TUMORS: IMMUNOCYTOCHEMICAL ANALYSIS OF 125 TUMORS.

Heitz PU, Kasper M, Polak JM, Kloppel G
Dept. Pathology, Univ. Basel, Schonbeinstrasse 40, CH-4056 Basel, Switzerland
Hum Pathol; 13(3):263-271 1982

One hundred twenty-five pancreatic endocrine tumors were analyzed by immunocytochemistry using various antisera. Twenty-three of 27 insulinomas, 10 of 10 PP-omas (PP: pancreatic polypeptide) and 15 of 30 'nonsecreting' tumors were benign, whereas 8 of 13 glucagonomas, 16 of 24 gastrinomas, and 16 of 21 VIP-omas (VIP: vasoactive intestinal polypeptide) were malignant. As a rule, the hormone secreted by the tumor and causing clinical symptoms could be localized by immunocytochemistry. Fifty of 95 active tumors were found to contain cells immunoreactive to peptide(s) not causing clinical symptoms, and 15 of 30 'nonsecreting' tumors were shown to be multicellular. By electron microscopy more than one cell type could be identified in 12 tumors. Histologically, the growth pattern of the tumors was very variable and distribution of immunoreactive cells was distinctly patchy. Radioimmunoassay on extracts of 20 of 27 tumors confirmed the presence of peptides visualized by immunocytochemistry. In 17 of 22 specimens, groups of endocrine cells in close contact with ductules were found in the pancreatic parenchyma distant from the tumor. Pancreatic endocrine tumors probably arise from the pancreatic ductular epithelium. They are often multicellular, producing and sometimes secreting more than one hormone or hormone-like substance. They represent highly complex biologic systems in which the interrelationship of various gastrointestinal-pancreatic hormones can be studied. (Author abstract) (45 Refs)

20. A CLINICAL EVALUATION OF SERUM ALPHA-1-ANTICHYMOTRYPSIN LEVELS IN LIVER DISEASE AND CANCERS.

Matsuzaki S, Iwamura K, Itakura M, Kamiguchi H, Katsunuma T

Dept. Medicine, Sch. Medicine, Tokai Univ. Bohseidai, Isehara Kanagawa, 259-11, Japan

Gastroenterol Jpn; 16(6):582-591 1981

The serum levels of alpha-1-antichymotrypsin (ACT) were studied in 168 patients with various liver diseases and cancers in conjunction with other liver function tests, serum sialic acid, AFP and CEA. The ACT levels in acute viral hepatitis and chronic hepatitis were not significantly altered compared with the normal level (220 +-40 ug/ml), although the level was slightly increased or decreased temporarily during the acute phase of the former. In liver cirrhosis, the mean level was significantly lower than the normal in spite of the absence of signs of hepatic decompensation (168 +-51 ug/ml, p less than 0.001). In contrast to cirrhosis, the levels were increased to various extents in 65% of cases with hepatoma, in spite of the association of liver cirrhosis in the majority of them. Much higher levels were observed in all cases of metastatic liver cancers and cancers of the pancreas and the biliary tract. The elevations were observed even in cases without the increase of AFP or CEA. Both in cirrhosis and cancers, ACT levels were not correlated with any of serum bilirubin and serum enzyme activities, but were positively correlated with the levels of plasma fibrinogen and serum sialic acid. The measurement of serum ACT level can be taken advantage of for the diagnosis and monitoring of liver cirrhosis and liver cancers, particularly of hepatoma without AFP elevation. (Author abstract) (18 Refs)

21. DIAGNOSIS OF CARCINOMA OF THE PANCREAS BY ASSAY OF IMMUNOSUPPRESSIVE ACIDIC PROTEIN.

Matsuno S, Kobari M, Matsuda Y, Sato T

First Dept. Surgery, Tohuku Univ. Sch. Medicine, Sendai 980, Japan

Tohoku J Exp Med; 136(1):1-10 1982

Immunosuppressive acidic protein (IAP) was measured by single radial immunodiffusion in serum from 46 pancreatic cancer patients, 211 controls, and patients with other malignant or benign inflammatory pancreatic diseases. A normal value of serum IAP of less than 500 ug/ml was used because 194/211 (91.9%) of the controls were below this value. Elevated serum IAP levels were seen in 44/46 (96%) pancreatic cancer patients, 24/26 (92%) bile duct cancer patients, all duodenal papilla or gallbladder cancer patients, 19/29 (66%) of chronic pancreatitis patients, all of acute pancreatitis or pancreatic cyst patients, and 0/3 insulinoma patients. Serum IAP correlated with tumor size and metastatic involvement of the liver and peritoneum, but not infiltration of the pancreatic capsule. It also seemed to correlate with recurrence after surgery, but not with serum carcinoembryonic antigen (CEA) levels, which were elevated (greater than 2.5 nanog/ml) in only 26/46 (57%). Portal blood sampling in four patients did not show elevated IAP or CEA levels at the site of tumor. The value of this assay for screening for pancreatic cancer is discussed. (10 Refs)

22. NATURAL KILLER CELL ACTIVITY IN GASTROINTESTINAL CANCER PATIENTS - DECLINE IN NATURAL KILLER CELL ACTIVITY IN TGAMMA CELLS AND THE ACTION OF INTERFERON ON ITS INCREASE.

Mugitani H, Suzuki M, Naruki Y, Ohtsuka S, Shinbo T

First Dept. Internal Medicine, Toho Univ. Sch. Medicine, Ota-ku, Tokyo, Japan

Nippon Gan Chiryo Gakkai Shi; 16(7):1371-1376 1981

Effects of interferon (IF) on natural killer (NK) cell activity of Tgamma-cells (IgG-Fc receptor-positive T cells) were investigated in peripheral blood lymphocytes of 21 patients with gastrointestinal cancer (17 gastric, 2 esophageal, 1 large intestine, and 1 gall bladder). T cells were isolated from peripheral blood lymphocytes, using the E-rosette sedimentation reaction; Tgamma-cells were isolated using theophylline. Release of 51Cr from 51Cr-labeled K562 cells was used to measure the NK cell activity. In 10 healthy subjects, the NK cell activity of mononucleocytes (MNC) was 46.5 +-13.1% and that of Tgamma-rich cells was 47.7 +-11.3%; these values were used as standards for NK cell activity in determinations of cytotoxic index. The cytotoxic index was applied to the NK cell activities of lymphocytes of the patients. The Tgamma cells showed a decline in NK cell activity in most of the 21 patients; there was also a decrease in NK cell activity in the MNC in these patients. Addition of 1,000 units of IF increased the NK cell activity of the MNC, T-rich and Tgamma-rich cells. The results suggested that the decreased NK cell activities of the Tgamma cells and the MNC may be due to decreased effector cell functioning and decreased production of IF. (27 Refs) (In JPN)

23. IMMUNOLOGY OF HUMAN GASTRIC CANCER: A PRELIMINARY REPORT.

Blanca I, Grases PJ, Matos V M, Contreras CE, Ochoa M, Wright H, Bianco C N

(c/o Grases), Instituto Anatomopatologico, Apartado 50647, Caracas, Venezuela

Cancer; 49(9):1810-1816 1982

The immunological spectrum in 15 patients with gastric cancer is presented. Patients were divided in three groups. Those with nonadvanced cancer, those with advanced but resectable lesions and those with advanced but nonresectable tumors. Preoperatively, elevated levels of circulating immune complexes (CIC) associated with hyporesponsiveness to phytohemagglutinin (PHA) and in mixed lymphocyte culture (MLC) as well as positive leukocyte inhibitory serum factor (LIF-S) were found in nearly half of the patients. Inhibitory or enhancing autologous serum factors were detected. Postoperatively, immunologic parameters return to normal in patients with nonadvanced cancer, while in advanced cancer, antibody and cell-mediated immune response remained altered, with some changes associated with chemotherapy. These findings are probably related with the presence or absence of tumor and offer a distinct approach in evaluating the immunologic response of a tumor-bearing patient. (Author abstract) (32 Refs)

SURGICAL AND RADIATION THERAPY

24. ESOPHAGECTOMY WITHOUT THORACOTOMY FOR CARCINOMA OF THE ESOPHAGUS.

Tryzelaar JF, Neptune WB, Ellis FH
(c/o Ellis) Dept. Thoracic and Cardiovascular Surgery, Lahey Clinic Medical Center, 41 Mall Road, Box 541, Burlington, MA, 01805
Am J Surg; 143(4):486-489 1982

During the past 2.5 yr, 13 patients underwent esophagectomy for carcinoma of the esophagus without the use of a thoracotomy. During the same period, 81 operations on the esophagus or cardia were performed, 73 of which were esophagogastrectomies. Two patients died, for a hospital mortality rate of 2.7%. Of the 13 patients, there were 7 women and 6 men with an average age of 59.7 yr. The lesion was located in the cervical esophagus in two, the upper thoracic esophagus in eight and the lower esophagus in three. One patient died on the 12th postoperative day, for a hospital mortality rate of 7.7%. Satisfactory relief of dysphagia was accomplished in all surviving patients, five of whom have died from the disease, from an average survival of 13.1 mo. Seven are currently alive, with the longest period of survival 20.5 mo. Esophagectomy without thoracotomy can be carried out with low mortality and morbidity rates. It is most applicable to patients with early lesions, particularly those in the cervical esophagus and the upper thoracic esophagus. (Author abstract) (20 Refs)

25. FUNDAMENTALS OF GASTRECTOMY FOR GASTRIC CARCINOMA: PROS AND CONS.

Peiper HJ
Univ.-Klinik fur Allgemeinchirurgie, Robert-Koch-Strasse 40, D-3400 Gottingen, W. Germany
Med Welt; 33(7):241-245 1982

Pros and cons of gastrectomy principles for gastric carcinoma are discussed based on personal results and literature data. With an overall 5-yr survival rate of 10%, the 5-yr survival rate is 30% after resection and over 80% for patients with early gastric cancer. These results have not been improved by gastrectomy of principle when considering all patients with gastric cancers of all localizations. On the other hand, the postoperative complication rate after total gastrectomy was found to be 33.3%, and the postoperative mortality rate was 13.5% (vs 23.7% in the literature). Therefore, the advantages offered by gastrectomy of principle for patients with certain tumor localizations are diminished or even offset by increased complication and mortality rates. In addition, gastrectomy of principle is indicated for only one third of all patients amenable to surgery with curative intent (in Stages T1-2 NO-1 MO). (15 Refs) (In GER)

26. GASTRECTOMY COMBINED WITH SPLENECTOMY AND IMMUNOTHERAPY FOR ADVANCED GASTRIC CANCER PATIENTS.

Miwa H, Kojima K, Tsurumi T, Orita K
First Dept. Surgery, Okayama Univ. Sch. Medicine, Okayama, Japan
Nippon Gan Chiryo Gakkai Shi; 16(7):1365-1370 1981

Postoperative cellular immunity and prognosis of 60 advanced gastric cancer patients (Group A) who were treated with gastrectomy combined with splenectomy were compared with those of 81 such patients (Group B) who were treated with gastrectomy alone. According to stage, 43 Group A and 74 Group B patients had Stage III cancer, and 17 Group A and 7 Group B patients had Stage IV. The splenectomies were performed because of the presence of metastatic lymph nodes and serosal invasion that was discovered during the surgery. Immunotherapy using levamisole (LMS; 150 mg/day, 3 days, po) was given to 18/60 patients who underwent splenectomy. Cellular immunity was investigated using blastogenic response of peripheral blood to phytohemagglutinin (PHA), peripheral lymphocyte counts, and skin responses to purified protein derivative or PHA. Lymph node metastases, particularly of the Number 10 lymph nodes, were more frequent in the Group A patients than in the Group B. Cellular immunity after surgery, compared to that before, decreased in the Group A patients who were not administered the LMS, but increased in the Group A patients who were administered the LMS. Three-yr actuarial survival rate of the Group A patients was 15% less than that of the Group B patients, but the Group A patients had more advanced gastric cancers than the Group B patients. Group A patients who were also administered immunotherapy had survival rates approaching those of the Group B patients. Splenectomy, combined with immunotherapy using LMS or some other drug, should be performed in patients with advanced gastric cancer if lymph node (Number 10 or 11) metastasis or serosal invasion is observed. (17 Refs) (In JPN)

27. THERAPY AND PROGNOSIS OF GASTRIC SARCOMA.

von Bulow M, Dzihniszewski G
Chirurgische Universitatsklinik, Langenbeckstrasse 1, D-6500 Mainz, W. Germany
Langenbecks Arch Chir; 356(2):129-140 1982

The treatment of 20 patients with gastric sarcomas and of 31 patients with gastric lymphomas is described. Undifferentiated sarcomas of the lowest level of tissue maturation (spindle-cell sarcomas) were diagnosed in 10/20 patients, differentiated sarcomas in 10 (liposarcoma in 1, neurogenic sarcoma in 5 and leiomyosarcoma in 4). Billroth's II resection was performed in five patients in Stage I and in three patients in Stage II, gastrectomy in five patients Stage II, wedge resection in one patient in Stage I, and exploratory laparotomy in six patients in Stage IV. The patients with sarcomas of low level of maturity were usually subjected to postoperative cytostatic therapy, and three patients were irradiated after surgery. Three patients in Stage Ib have been alive for more than 8 yr, while the 5-yr survival rate was lower than 50% in Stage Ic. The 5-yr survival rate was 0% in Stages II and III. Twenty-three of the 31 patients with malignant lymphomas were followed up. Seven of the 23 patients in Stages I and II were subjected to tumor resection with radiotherapy and chemotherapy; the mean survival time was 58 mo. Five other patients, subjected to tumor resection only, had an av survival time of 18 mo. the combination of chemotherapy and radiotherapy was also found to be definitely advantageous in the patients in Stages III and IV, in whom the diagnosis of lymphoma was usually established only postoperatively. (19 Refs) (In GER)

28. RESECTION OF THE HEAD OF THE PANCREAS (CEPHALIC PANCREATECTOMY) WITH CONSERVATION OF THE DUODENUM IN CHRONIC PANCREATITIS, TUMORS OF THE HEAD OF THE PANCREAS AND COMPRESSION OF THE COMMON BILE DUCT.

Beger HG, Krautzberger W, Gogler H

Frei Universitat Berlin Service de Chirurgie, Universitatsklinikum Charlottenbourg, Spandauer Damm 130, 1000 Berlin 19, W. Germany

Chirurgie; 107(8):597-604 1981

Seventeen patients with chronic pancreatitis and a tumor of the head of the pancreas, underwent resection of the head of the pancreas with conservation of the duodenum. In order to exclude the possibility of malignant tumors, several biopsies were performed before and after resection. In the surgical procedure a jejunal loop was placed between the body of the pancreas and what remained from the head of the pancreas stuck to the wall of the duodenum. In five patients with pre-papillary stenosis of the common bile duct, choledochojejunostomy were performed to restore bile flow. There was no mortality during hospitalization. One patient (5.9%) died 10 mo postoperatively. Twelve patients were able to return to work without any complications, and three patients returned to work on a limited basis. The advantages of this surgery over partial duodenopancreatectomy are the maintenance of intestinal passage, the preservation of other organs, especially the stomach, the partial maintenance of exocrine functions of the left pancreas, the maintenance of insulin secretion, and the possibility of tumor analysis. Although the technique described works well for small tumors, complications may occur and more involved surgical procedures may be needed in the case of larger tumors. (13 Refs) (In FRE)

29. RESECTION OF GASTRINOMA IN THE ZOLLINGER-ELLISON SYNDROME.

Barreras RF, Mack E, Goodfriend T, Damm M

CSC H6/518, 600 Highland Ave., Madison, WI, 53792

Gastroenterology; 82(5,part1):953-956 1982

Patients with the Zollinger-Ellison syndrome have been managed by total gastrectomy and more recently, by the use of H2-receptor antagonists. An alternative approach has been to identify those who might be cured by excision of a pancreatic islet-cell tumor without removal of the stomach. The course of such a patient is reported. A 40-yr-old man with massive gastric hypersecretion, acid-peptic disease, diarrhea, and elevated serum gastrin was treated by excising a pancreatic gastrinoma. Serum gastrin and gastric secretion became and have remained normal for 7 yr. Symptoms ceased and provocative tests with secretin and calcium have remained normal. Three additional patients with Zollinger-Ellison syndrome in whom pancreatic islet-cell tumor resection alone has resulted in long-term cures have been identified. All were middle-aged men with severe diarrhea. These successes, the availability of techniques that permit early identification and localization of gastrinomas, and the advent of H2-receptor antagonists that can control gastric hypersecretion without gastrectomy must be considered in managing patients with gastrinomas. (Author abstract) (26 Refs)

30. PERCUTANEOUS TRANSHEPATIC BILIARY DRAINAGE AND IMPLANTATION OF ENDOPROSTHESES: A CONTRIBUTION OF INTERVENTIONAL RADIOLOGY TO THE TREATMENT OF OBSTRUCTIVE JAUNDICE.

Bruhlmann W, Pouliadis G, Zollikofer C, Hollinger A, Metzger U

Rontgendiagnostisches Zentralinstitut, Universitatsspital Zurich, Ramistrasse 100, CH-8091 Zurich, Switzerland

Praxis; 71(10):408-414 1982

The technique of percutaneous transhepatic biliary drainage (PTBD) for treatment of malignant stenosis of the bile duct is described and results are compared with those of other methods. PTBD is performed under local anesthesia. The biliary tract is first analyzed by percutaneous transhepatic cholangiography. A guide wire is then inserted through the liver, bile duct, and stenosis, into the duodenum. A drainage catheter is then passed along the guide wire. Initially bile is drained externally; after 2 days the external end of the catheter is closed and drainage into the duodenum is established. Definitive drainage is accomplished by replacement of the external catheter with an endoprosthesis. PTBD was performed on 23 patients, 12 of whom received endoprostheses. The procedure was successful in 22/23 patients. Good drainage function was achieved in 18 patients. Normal bilirubin levels were achieved in 6/12 patients with endoprostheses during 1-12-mo follow-up periods. Complications included cholangitis (4 cases), biliary peritonitis (1 case), and biliary pleural effusion (1 case). One patient died. PTBD is recommended for clinical, practice, but since the procedure is invasive, thorough discussion by the referring physician, radiologist, and surgeon is required. (15 Refs) (In GER)

SELECTED CLINICAL CORRELATIONS

31. NON-HODGKIN'S PRIMARY MALIGNANT LYMPHOMAS OF THE DIGESTIVE TRACT.

Diebold J, Audouin J, Auffret Y, Balouet G, Berjou B, Bataille F, Beiz L, Ben Bouali A, Bertrand G, Bonard J, Borel B, Bouc M, Boutiller J, Briere J, Bruel M, Bretagne JF, Caron-Poitreau C, Cazagou JF, Dartois M, Dauver A, David P, Jacob J, Jobard P, Josso A, Davy A, Joubaud F, Justum AM, Lancien G, Laroche C, Delmas P, Launois B, Le Bodic L, Le Bodic MF, Leguene B, Delorme B, LemevelB, L'Hintre M, L'Hirondel C, Louvet M, Derobert L, Mandard P, Marchand P, Marionneau J, Metman EH, Dhermies J, Mo

(c/o Borel) Laboratoire d'Anatomie pathologique, CHU Cote de Nacre, 14040 Caen, France

Ann Gastroenterol Hepatol; 18(2):97-113 1982

A retrospective study of 60 cases of non-Hodgkin's malignant lymphomas of the digestive tract revealed that epigastric pain and changes in patient's general health were the most common symptoms on presentation. In 7/13 cases examined endoscopically, there were obvious malignant ulceration of the stomach. Tumors classified as highly malignant (35) outnumbered those less invasive (17). There were 16 tumors larger than 5 cm. Surgery with curative intent was performed in 88% of the cases. Palliative surgery was most often performed when the small intestine (4/28) was involved. Postsurgical mortality (PM) was 11.5%. PM was a function of patient's age, health status, and type of surgery. Radiotherapy and chemotherapy, alone or associated, completed surgical treatment in 37 cases. Thirty-three patients survived between 1-6 yr, and 27 died after a period of a few mo to 2 yr. The overall survival rate at 1 yr was 60%. Of the 37 patients who received adjuvant therapy, 19 (51%) were alive after 1 yr with no apparent recurrence. Only 6/16 (37%) of the patients who did not receive complementary treatment were alive after 1 yr. (48 Refs) (In FRE)

32. NON-HODGKIN'S LYMPHOMA IN THE GASTROINTESTINAL TRACT.

Melsom H, Rode L, Kaalhus O, Elgjo RF, Langholm R, Marton P
Alminnelig avdeling, Det Norske Radiumhospital, Montebello, Oslo 3, Norway
Tidsskr Nor Laegeforen; 102(6):374-377 1982

Primary non-Hodgkin's lymphoma of the gastrointestinal tract was diagnosed in 61 patients. Lymphosarcoma was found in 20 patients, reticulosarcoma in 32 and unclassifiable lymphoma in 9. According to the Kiel classification, lymphocytic lymphoma was diagnosed in 2 patients, lymphoplasm cytoid lymphoma in 22, centrocytic lymphoma in 2, centroblastic/centrocytic lymphoma in 18, lymphoblastic lymphoma (including Burkitt's lymphoma) in 8, immunoblastic lymphoma in 4, and unclassifiable lymphoma in 4. Pains, weight loss, emesis and nausea were the most frequent symptoms. The disease was diagnosed in most patients within 3 mo from the onset of the first symptoms The tumor was localized in the stomach in 31 patients, in the small intestine in 15, in the large intestine in 5, in the ileocecal region in 4, and in the mesentery in 6. Thirty patients were in Stage I, 31 in II. Eleven patients (10 in Stage I and 1 in II) were subjected to surgery only, 19 (including 10 in Stage I) to surgery and radiotherapy, 31 (including 10 in Stage I) to surgery, radiotherapy and cytostatic therapy. The 5-yr survival rate was higher than 60% for the patients with gastric lymphomas, but lower than 25% for those with tumors of other localization in the intestine. The 3-yr survival rate was 9/11 after surgery only. The 5-yr survival rate was 13/19 after surgery with postoperative radiotherapy and 3/31 after surgery with radiotherapy and cytostatic therapy. Surgery with postoperative radiotherapy was found to be most effective in patients with limited disease. (10 Refs) (In NOR)

REHABILITATION ASPECTS

33. INVESTIGATION OF POSTOPERATIVE RETURN TO SOCIETY BY GASTRIC CANCER PATIENTS WITH CANCERS DETECTED DURING MASS SURVEY EXAMINATION.

Sugawara N, Yanbe T, Yamagata S, Asaki S, Iwai S, Hisamichi S
Cancer Detection Center, Miyagi Cancer Center, Sendai, Japan
Nippon Gan Chiryo Gakkai Shi; 16(7):1339-1345 1981

Of 1,380 patients found during a mass survey examination (1965-1974) to have gastric cancer, 622 (62.2 + -9.8 yr old) survived greater than 5 yr after gastrectomy and were sent questionnaires concerning the degree to which the patients returned to a normal life, the time required to return to society, the degree of sensory satisfaction the patients achieved following surgery, postoperative complaints, and postoperative complications. Of 423 patients who answered the questionnaires satisfactorily, 367 underwent distal gastrectomy, 40 total gastrectomy, and 16 proximal gastrectomy. Ability to return to work postoperatively in a preoperative capacity was reported by 316 of the 423 patients; the patients who underwent distal gastrectomy were more often able to return to full working capacity than those who underwent total gastrectomy or proximal gastrectomy. Return to society was achieved by 143 of the 423 patients in less than 3 mo, by 103 within 4-6 mo, by 28 within 7-9 mo, by 101 within 10-12 mo, and by 48 in greater than 12 mo. Return to society within 3 mo was achieved more often by patients who underwent distal gastrectomy than by those who underwent total or proximal gastrectomy. Loss of appetite was observed in 203 of the patients. Food preferences changed in 139; foods that patients ate less frequently or not at all consisted of milk products, oily foods, sweets, eggs, and meat, in decreasing order. Food intake was reduced in 236 of the patients and increased in 73. Loss of body wt was reported by 222. Complications were observed in 120; hepatitis was reported by 47, including 34 with serum hepatitis. (18 Refs) (In JPN)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

34. FAMILIAL POLYPOSIS COLI AND PERIAMPULLARY MALIGNANCY.

Harned RK, Williams SM
Dept. Radiology, Univ. Nebraska Medical Center, 42nd and Dewey Ave., Omaha, NE, 68105
Dis Colon Rectum; 25(3):227-229 1982

Patients with polyposis coli have an increased risk of developing periampullary malignancies, particularly if duodenal polyps are present. Since periampullary neoplasms occur, on the av, 15 yr following the initial diagnosis of colonic polyps, periodic follow-up radiologic studies of the upper gastrointestinal tract are necessary in the management of polyposis coli. (Author abstract) (21 Refs)

35. MISCELLANEOUS DISORDERS. THE GASTROINTESTINAL TRACT.

Candy DC, Howard FM, McNeish AS
Univ. Birmingham Inst. Child Health, Nuffield Building, Francis Road, Birmingham B16 8ET, England
Clin Gastroenterol; 11(1):207-229 1982

Miscellaneous disorders of the gastrointestinal tract and genetic and familial factors are discussed. In two families from Liverpool, 24 cases of esophageal carcinoma were associated with tylosis. Several families with a high incidence of gastric carcinoma have been described. The blood group A phenotype confers a 10-20% elevation in gastric carcinoma rate. Small intestinal primary carcinoma does not occur in geographical or population clusters, suggesting that genetic or environmental influences are unimportant. Underlying chronic small intestinal disorders such as celiac disease and Crohn's disease predispose small bowel malignancy; such disorders appear to run in families. (157 Refs)

36. RISKS OF CHRONIC PANCREATITIS, HEPATOCIRRHOSIS, AND PANCREAS CANCER: ROLE OF ALCOHOL CONSUMPTION, RESULTS OF 3 RETROSPECTIVE STUDIES (CASE-CONTROLS).

Durbec JP, Bidart JM, Sarles H
(c/o Sarles) Unite de Pathologie Digestive, INSERM U 31, 46, Chemin de la Gaye, 13009 Marseille, France
Mater Med Pol; 13(1):10-14 1981

Results of three retrospective, case-control studies of the role of alcohol in chronic pancreatitis (CP), hepatocirrhosis (HC), and pancreatic cancer (PC) are reported. The logarithmic risk of CP and HC varied in linear fashion with alcohol consumption, with no threshold effect. Alcohol had no effect on risk of PC, except in the case of beer, which increased the risk significantly. Lipid consumption appeared to be an etiological factor in PC. (19 Refs)

37. EFFECTS OF LOW-DOSE RADIATION. A CORRELATION STUDY.

Edling C, Comba P, Axelson O, Flodin U
(c/o Axelson) Dept. Occupational Medicine, Univ. Hosp., S-581 85 Linkoping, Sweden
Scand J Work Environ Health; 8(Suppl1):59-64 1982

Based on information in the literature, five types of malignancies (lung, breast, and pancreatic cancer, leukemia, and multiple myeloma) as probably respondent to irradiation induction and therefore likely to correlate with background radiation were chosen for the correlation study on effects of low-dose radiation. Mortality rates age-standardized directly for lung and breast cancer and leukemia during 1969-1978 and for pancreatic cancer and multiple myeloma during 1961-1973 in the counties of Sweden and for persons 40 yr old and over, along with estimates of background radiation (cosmic radiation excluded), Pearson coefficients and p-values are presented. Significant correlation was observed between the estimates of background radiation and lung cancer, for both males and females. A similar correlation was observed for pancreatic cancer in both sexes. Leukemia showed a correlation of borderline significance for males and a weaker correlation for females. Breast cancer (in women only) and multiple myeloma did not show any significant correlation. Risk estimates for lung cancer per working level mo (WLM) and per 10(6) person-yr for persons greater than 50 yr old in various Swedish populations (including Zn-Pb miners) and estimates given in a previous report indicate that 25-35 cases per 10(6) person-yr and per WLM might result from radon daughter exposure. (31 Refs)

38. FLUORIDATION AND CANCER: AN EPIDEMIOLOGIC APPRAISAL.

Neuberger JS
Dept. Community Health, Univ. Kansas Sch. Medicine-Kansas City, Kansas City, KS
J Kans Med Soc; 83(3):134-139 1982

The relationship of water fluoridation to cancer has been studied extensively, perhaps more intensively than many other chemicals in the environment. In 1977, a paper was published under the auspices of the National Health Foundation (NHF), showing a greater increase in the cancer death rates (1940-1970) in the 10 largest American cities that began fluoridation before 1960, as compared to the 10 largest cities not fluoridated as of 1969 (excluding New York City and Detroit). The studies done by the NHF have provided the anti-fluoridationists' greatest arguments against water fluoridation. However, these studies did not meet even minimally acceptable standards for generally accepted epidemiologic research. Other studies by other scientific investigators (including several by the National Cancer Institute) indicate that fluoride is not even associated with cancer, still less a causative factor. The age-adjusted mortality rates in white Kansas residents (both sexes) for 1973-1977 were studied for cancer sites that might possibly be related to water borne carcinogens (stomach, colon, rectum, liver, pancreas, kidney, bladder, and bone), in fluoridated and non-fluoridated Kansas counties of the highest populations. (Wichita, the largest city in Kansas, is not fluoridated). The data were analyzed in terms of person-yr of exposure to fluoride. No association of artificial water fluoridation with cancer was found. It is concluded that current evidence does not support the contention that fluoride is associated with cancer. (9 Refs)

39. A COHORT STUDY ON MORTALITY AMONG LONG-TIME EMPLOYED SWEDISH CHIMNEY SWEEPS.

Hogstedt C, Andersson K, Frenning B, Gustavsson A
Dept. Occupational Medicine, Natl. Board Occupational Safety and Health, S-171 84 Solna, Sweden
Scand J Work Environ Health; 8(Suppl1):72-78 1982

A cohort study was performed on all members of the Swedish Chimney Sweeps Union who were active in 1950 or later and who were members for at least 10 yr. A total of 2,071 sweeps were studied; 2,048 were evaluable. Compared to the national av, the mortality of the exposed cohort was significantly increased (230 observed vs 197.6 expected before the age of 80) due to a greater number of deaths from tumors, particularly lung and esophageal cancer, and from nonmalignant diseases of the respiratory system (chronic bronchitis, emphysema, and asthma). The increased overall mortality was higher among those with shorter exposure time, although esophageal cancer and chronic respiratory diseases were more frequent in long-time exposed individuals. The excess mortality was more predominant among men who left the profession before 1965 than among those who were still working that yr or later. Exposure of chimney sweeps could explain the mortality pattern observed in this study, however, cigarette smoking may have been a contributing factor. Exposure to polycyclic aromatic hydrocarbons, nitrogen compounds, arsenic, and asbestos in combination with promotion from exposure to sulfur dioxide probably caused the increased mortality in these men. (21 Refs)

40. THE UTILITY OF REGIONAL CANCER MORTALITY DATA FOR IDENTIFYING OCCUPATIONS AT HIGH RISK.

Kraus JF, Franti CE, Newman B
Sch. Public Health, Div. Epidemiology, Southern Occupational Health Center, Univ. California, Room 76-078, Los Angeles, CA, 90024
Scand J Work Environ Health; 8(Suppl1):65-71 1982

Relation of the excess in cancer death (CD) rates in Sacramento County with specific occupations was investigated and the utility of census data for such analysis is discussed. The analysis of CD by occupation was limited to white males, usual residents of Sacramento County (RSC). The CD certificates examined were restricted to persons whose age at death was from 40-64 yr. During the 1969-1977 period, 1,997 CD among male RSC were observed. The observed and expected numbers of CD and the standardized mortality ratio (SMR) for each of the occupational groups are presented. Technicians, construction craftsmen and cabinet makers, metal craftsmen, and non-farm laborers showed SMR greater than 140. SMR of less than 70 was found for lawyers, physicians, scientists, teachers, social and religious workers, and sales clerks. Construction craftsmen and drivers exhibited excessive SMR in older age group (55-64 yr old). Low SMR were found for teachers, social/religious workers, and sales clerks in both age groups and for young lawyers, physicians, and scientists. SMR for greater than 140 by occupational category and cancer site is presented. The SMR for metal craftsmen and engineers were excessive for cancer of the esophagus and CNS. Construction workers and drivers had high SMR for cancer of the esophagus and skin. Technicians showed a high SMR for cancer of the bowel and CNS. Several occupational categories showed low SMR for cancer of the lung, including teachers, social/religious workers, writers, artists, architects, clerical workers, station engineers, mechanics, foremen, operatives, farmers, police, fire, and safety officers. Clerical workers and operatives had low SMR for leukemia and lymphoma. (9 Refs)

41. MORTALITY AND CANCER MORBIDITY AMONG WORKERS IN THE RUBBER TIRE INDUSTRY.

Delzell E, Lewis J, Monson RR
(c/o Monson) Dept. Epidemiology, Harvard Sch. Public Health, 677 Huntington Ave., Boston, MA, 02115
Am J Industr Med; 2(3):209-216 1981

Mortality and cancer incidence were evaluated retrospectively in 1,792 white men employed at a rubber tire plant between 1954 and 1976. The 1,792 workers had accumulated 26,839 person-yr of follow up. Among men employed for 10 yr or more, overall cancer mortality was approx 19% higher than that expected in Connecticut white males, whereas cancer incidence for all sites combined was similar in the two groups. Excesses in deaths and incident cases for cancers of the buccal cavity and pharynx, large intestine, pancreas, and kidney were observed. The workers also showed excesses in deaths from cancers of the digestive organs and peritoneum and incident cases of cancer of the bronchus and lung. No increase in occurrence of stomach or bladder cancer or of leukemia was seen. Limitations of the data are discussed in terms of interpreting the results. As the workers investigated were young (93% total person-yr less than 65 yr old), and because estimates of cancer excesses were conservative in this study, cancer mortality and morbidity should continue to be monitored in the rubber industry. (15 Refs)

42. CANCER RESEARCH IN THE PEOPLE'S REPUBLIC OF CHINA AND THE UNITED STATES OF AMERICA. EPIDEMIOLOGY, CAUSATION AND NEW APPROACHES TO THERAPY. PROCEEDINGS OF A CONFERENCE HELD IN NEW YORK, 28-29, MARCH, 1980.

Marks PA
Memorial Sloan-Kettering Cancer Center, New York, NY
Cancer Research in the People's Republic of China and the United States of America. Epidemiology, Causation and New Approaches to Therapy, Proceedings of a Conference held in New York, 28-29, March, 1980. New York, Grune and Stratton, 273 pp., 1981.

Cancer (CA) epidemiology, causation, diagnosis, and therapy are discussed. An overview of CA research, needs and opportunities of evolving perspectives on the epidemiology of CA, a national survey of CA mortality in China, geographic patterns of CA in the United States, and progress of CA epidemiology in China are presented. The study of a virus-related protein in human breast CA, the nature of CA cells, potential carcinogens in the diet of individuals at high risk for esophageal CA, association of the Epstein-Barr virus with nasopharyngeal carcinoma (CR), aspects of research studies on liver CR, the mechanisms of action of carcinogens and tumor promoters and their relevance to CA prevention, immunological studies of esophageal CA in man, and nasopharyngeal CR epidemiology, risk factors and screening for early detection are presented. Recent progress in antineoplastic drug research in China, gene amplification in methotrexate resistant cells, and studies on harringtonine as a new antitumor drug are discussed. Advances in the study of CA epidemiology, biology, and therapy in the laboratories are offering new options for the prevention and treatment of CA. The substantive exchanges among scientists of these countries provide data useful for CA research and treatment. (365 Refs)

43. AN ASSESSMENT OF CANCER MORTALITY IN GREATER BOMBAY.

Jussawalla DJ, Yeole BB, Natekar MV
Cancer Registry Div., Indian Cancer Society, E. Borges Marg, Parel, Bombay 400012, India
Indian J Med Res; 75:68-82 1982

Cancer was found responsible for approx 3.6% (2.2% males and 1.4% females) of the total number of deaths occurring in Greater Bombay. It was the nineth and eighth commonest cause of death in males and females respectively, in the city. When the mortality rate was examined by age-groups, cancer ranked as the fifth leading cause of death in men and the fourth in women, in those aged 45 and above. The av annual age-adjusted death rate for all sites, was 91.6 in males and 74.8 in females per 100,000 population. Mortality increased with advancing age in both sexes. The truncated death rates for females were found to be higher than for males; thus between the ages of 25 and 54, female deaths exceeded the males, perhaps because of the large number of fatalities caused by cervical and breast cancers at these ages. Around 55, the curves for men and women intersected, following which the male rates were seen to rise steeply, due to the increasing incidence of lung, esophageal and prostatic cancers in men above that age. The common sites leading to death from cancer appeared to be the lung, esophagus, larynx, stomach and prostate in males and breast, cervix, ovaries, esophagus and the stomach in females. Gastro-intestinal cancers were a major cause of death in both sexes. (Author abstract) (14 Refs)

44. STUDIES ON POTENTIAL CARCINOGENS IN THE DIET OF INDIVIDUALS AT HIGH RISK FOR ESOPHAGEAL CANCER.

Li MH
Inst. Cancer Res., Chinese Acad. Medical Sciences, Beijing, People's Republic of China
Cancer Research in the People's Republic of China and the United States of America: Epidemiology, Causation and New Approaches to Therapy, Proceedings of a Conference held in New York, 28-29, March, 1980. Marks PA, ed. New York, Grune and Stratton, 273 pp., 1981.

Studies on etiological agents of esophageal cancer in the high-risk areas are discussed. Environmental factors apparently play an important role in the development of esophageal cancer. Some foodstuffs in Linxian are frequently contaminated by Fusarium moniliforme and other fungi. Formation of dimethylnitrosamine, diethylnitrosamine, methylbenzylnitrosamine, and a new volatile N-nitroso compound, N-1-methylacetonyl-N-3-methylbutylnitrosamine has been demonstrated in moldy cornbread after an 8-day incubation, when a small amount of NaNO2 was added initially. Other contributing factors in the environment are nutritional deficiencies in animal protein and fat, vitamins A, B2, and C, high levels of nitrates and nitrites in water and food, low molybdenum and zinc, imbalance of trace elements, and indoor air pollution from coal stoves during the winter. (10 Refs)

45. IS AFLATOXIN B1 A HEPATIC CARCINOGEN IN MAN?.

Franco D, Castaing D, Brechnot C, Morin J
Groupe de Recherche de Chirurgie Hepatique (INSERM U-17), Hopital Paul-Brousse, 14, avenue Paul-Vaillant-Couturier, F-94800 Villejuif, France
Gastroenterol Clin Biol; 6(2):125-128 1982

Arguments for the hepatic carcinogenicity of aflatoxin B1 (AFB) in man are discussed: AFB is a carcinogen in nonhuman primates; in vitro studies show that the metabolism of AFB by human liver microsomes is identical to that observed in rat microsomes; AFB liver toxicity in man has been well-demonstrated; epidemiologic studies have shown that hepatocellular carcinoma is particularly frequent in countries with high levels of AFB contamination of food. (32 Refs) (In FRE)

SELECTED PRE-CLINICAL STUDIES

46. BIOSYNTHESIS OF AN INTERSTITIAL TYPE OF COLLAGEN BY CLONED HUMAN GASTRIC CARCINOMA CELLS.

Sakakibara K, Suzuki T, Motoyama T, Watanabe H, Nagai Y
Dept. Pathobiochemical Cell Res., Inst. Medical Science, Univ. Tokyo, Shirokanedai, Minatoku, Yokyo 108, Japan
Cancer Res; 42(5):2019-2027 1982

In an attempt to elucidate the role played by neoplastic epithelial cells in the formation of stromal collagen, the synthesis of collagen by two cloned human gastric carcinoma cell lines was studied. The presence of antigenicity of procollagen alpha1(I) chain in the cytoplasms of both carcinoma cell lines growing in culture was demonstrated by an immunocytochemical technique using specific antibodies. After denaturation of the radiolabeled collagenous proteins extracted from the combined cells and culture media, two components comigrating with authentic alpha1(I) and alpha2 chains on sodium dodecyl sulfate:polyacrylamide gel electrophoresis were found. Electrophoretogram analysis revealed further a dense band slightly slower than the alpha1(I) chain, most likely representing alpha1(I) trimer. These radioactive components disappeared after exposure of the samples to bacterial collagenase. The relative activity of collagen synthesis determined by using purified collagenase was slightly higher than that of fibroblasts derived from human synovial membrane in culture. The same antibodies to procollagen alpha1(I) chain also labeled the cytoplasms of carcinoma cells, and extracellular matrix of the tumors developed after transplantation of one of the cell lines into the nude mice. Our data indicate that both human gastric carcinoma cell lines synthesize type 1 collagen in vivo as well as in vitro and suggest that carcinoma cells may play an active role in the formation of stromal collagen in most human carcinomas. (Author abstract) (41 Refs)

47. BACTERIAL COLONIZATION FOLLOWING RESECTIVE AND NONRESECTIVE GASTRIC SURGERY.

Falter E, Preac-Mursic V, Hellerer O, Bruckner WL
Chirurgische Poliklinik, Universitat Munchen, Pettenkoferstr. 8a, D-8000 Munchen 2, W. Germany
Z Gastroenterol; 20(1):33-39 1982

Bacterial growth following resective and nonresective gastric surgery was studied in 120 male Sprague-Dawley rats. Groups of 20 rats each underwent laparotomy (control), selective proximal vagotomy (SPV) with preservation of the innervation of the antrum, SPV with pyloroplasty (SPV+Pypl), trunk vagotomy (TV) with pyloroplasty (TV+Pypl), antecolic resection according to Billroth II without enteroanastomosis (BII), or BII+TV. At 8 mo after surgery smears were obtained under general anesthesia from the transitional segment between the fundus and the antrum or from the site of anastomosis. Smears were examined for aerobic and anaerobic bacteria and fungi. Control rats and those that underwent SPV+Pypl showed similar total bacterial counts and relative nitrobacter fractions. Rats that underwent SPV, BII, or BII+TV had nitrobacter counts approx 10x as high as those in control rats. Rats that underwent BII+TV had total bacteria counts approx 3x as high as those in rats that underwent BII without TV. Comparison of the test groups indicates that bacterial growth in the stomach was promoted by reduced production of gastric acid, reflux of bile secretions, and retarded food passage. Increased bacterial growth promoted intragastric formation of carcinogenic nitrosamines. (28 Refs) (In GER)

48. ENHANCED EFFECT OF GASTRIN ON RAT STOMACH CARCINOGENESIS INDUCED BY N-METHYL-N'-NITRO-N-NITROSOGUANIDINE.

Tahara E, Shimamoto F, Taniyama K, Ito H, Kosako Y, Sumiyoshi H
Dept. Pathology, Hiroshima Univ. Sch. Medicine, 1-2-3 Kasumi, Minami-ku, Hiroshima 734, Japan
Cancer Res; 42(5):1781-1787 1982

This study deals with the effects of gastrin on the incidence of gastric tumors in rats induced by N-methyl-N'-nitro-N-nitrosoguanidine. Inbred Basel-Wistar rats received N-methyl-N'-nitro-N-nitrosoguanidine in drinking water (50 ug/ml for 32 wk) in order to produce gastric carcinoids. A treatment with sc injection of pentagastrin (300 ug/kg, once daily for 4 wk) was started at the beginning of N-methyl-N'-nitro-N-nitrosoguanidine treatment simultaneously, on the 4th, 8th, 16th, and 32nd wk after start of N-methyl-N'-nitro-N-nitrosoguanidine treatment, respectively. At autopsy, from the 55th to 60th wk after start of the experiment, only in the 8th-wk group of gastrin-treated rats was the incidence of gastric carcinoid significantly higher than in the gastrin-untreated group of rats receiving N-methyl-N'-nitro-N-nitrosoguanidine alone. The incidence of adenocarcinoma in the glandular stomach also was high only in the 4th-wk group of gastrin-treated rats. However, these effects could not be seen in other gastrin-treated or untreated groups of rats. The data suggest that gastrin treatment in the early stage of rat stomach carcinogenesis by N-methyl-N'-nitro-N-nitrosoguanidine is effective in increasing the development of gastric tumors. (Author abstract) (21 Refs)

49. PREPARATION AND ANTITUMOR ACTIVITY OF NONTOXIC LIPID A.

Ribi E, Amano K, Cantrell J, Schwartzman S, Parker R, Takayama K
Ribi Immuno Chem Res., Inc., P.O. Box 1409, Hamilton, MT, 59840
Cancer Immunol Immunother; 12(2):91-96 1982

The isolation of endotoxin B5 from the endotoxic extract ReGl-PCP from Salmonella typhimurium strain G30/C21, a heptose-less mutant, and the effects of B5 on line-10 hepatocellular carcinomas in guinea pigs was examined. B5 combined with trehalose dimycolate (P3) produced line-10 tumor regression in only 1/26 guinea pigs unless an essentially nontoxic peptide-containing side-fraction (ACP) recovered during isolation of B5 was added. Addition of ACP produced a cure rate of 81% (54/67 guinea pigs). Two cycles of treatment of B5 with 20 mM sodium acetate at 100 C for 30 min caused the removal of 99% of the 2-keto-3-deoxyoctonate (KDO) content without loss of toxicity or tumor-regressive potency indicating. More drastic treatment of B5 led to a product, B5-HCl, which was also depleted of KDO but was essentially nontoxic and not pyrogenic. B5-HCl produced cures in 27/32 tumor-bearing guinea pigs. Results of chemical analyses showed that glucosamine and total fatty acid content of the toxic B5-pH 4.5 and the nontoxic B5-HCl were essentially the same, but the nontoxic B5-HCl was significantly lower in phosphorus content. Thin layer chromatography revealed that B5-HCl contained components of lower polarity. The results suggested that loss of toxicity was due to removal of the acid-labile phosphate group. Inoculation of combined B5 and N-acetyl-muramyl-L-seryl-D-isoglutamine (MDP) killed 3/5 guinea pigs, while combination of B5-HCl and MDP caused neither lethargy nor death. It was suggested that B5-HCl is a potential candidate for immunotherapy of human cancer. (23 Refs)

50. ROLE OF ESTROGENS AS PROMOTERS OF HEPATIC NEOPLASIA.

Wanless IR, Medline A
Dept. Pathology, Toronto Western Hosp., Toronto, Ontario, Canada
Lab Invest; 46(3):313-320 1982

The administration of estrogens to humans has been associated with the development of benign and possibly malignant hepatocellular neoplasms. This study was designed to investigate the mechanism of this association. We present a rat model that demonstrates that stilbestrol (DES) and ethinyl estradiol promote the development of hepatic neoplasms in rats previously initiated with diethylnitrosamine (DEN). Eighty male and 12 female Fischer-344 rats were given a single intraperitoneal injection of either DEN (200 mg/kg of body wt) or saline. Beginning 4 wk after injection, the rats were given an estrogen or corn oil twice weekly for up to 50 wk. Treatments were stopped at the time of sacrifice or 11 to 29 wk prior to sacrifice. Estrogen treatments included high dose DES (5 mg per dose), low dose DES (0.5 mg per dose), and ethinyl estradiol (0.2 mg per dose). Male and female rats given both DEN and high dose of DES developed grossly visible hepatic hyperplasic nodules (mean, 9.1 per liver) after 20 wk of DES. Nodules also developed if the onset of DES treatment was delayed until 28 wk after initiation. Rats given DEN alone or DES alone did not develop nodules after 20 wk. Microscopic hyperplastic foci also developed in rats given DEN plus DES, DES alone, and DEN alone. The foci in rats given DES alone were largely reversible on cessation of estrogen therapy. Mitotic activity in foci and nodules was prominent during estrogen therapy but declined markedly after cessation of therapy. Similar promoting activity of ethinyl estradiol was observed. Low dose DES was not effective in promoting tumor formation. The data indicate that estrogens promote hepatic neoplasia, perhaps by increasing hepatocyte mitotic activity and thereby facilitating the evolution of previously initiated cells into neoplastic clones. Comparison with human disease should be made with caution, especially because the estrogenic dose administered was approx 200-fold the usual contraceptive dose in humans. However, the analogy between this model and the development of human oral contraceptive-associated hepatic tumors is evident. It is possible that some women have latent 'initiated' cells that divide faster than the surrounding hepatocytes in response to estrogens. (Author abstract) (29 Refs)

☆ U. S. GOVERNMENT PRINTING OFFICE : 1982—361-847/124

READEX FICHE best copy available

AUTHOR INDEX WITH CITATION NUMBERS

Amano K ... 49
Andersson K ... 39
Asaki S ... 33
Audouin J ... 31
Auffret Y ... 31
Axelson O ... 37
Balazs M ... 9
Balouet G ... 31
Barjou B ... 31
Barreras RF ... 29
Bataille F ... 31
Beger HG ... 28
Belz L ... 31
Ben Bouali A ... 31
Bertrand G ... 31
Beyer J ... 14
Bianco C N ... 23
Bidart JM ... 36
Blanca I ... 23
Bolarin DM ... 13
Bonard J ... 31
Borel B ... 31
Bouc M ... 31
Boutiller J ... 31
Brechnot C ... 45
Bretagne JF ... 31
Briere J ... 31
Bruckner WL ... 47
Bruel M ... 31
Bruhlmann W ... 30
Bucheler E ... 5
Buchmann P ... 10
Buhler H ... 10
Caduff B ... 10
Candy DC ... 35
Cantrell J ... 49
Caron-Poitreau ... 31
Castaing D ... 45
Cazagou JF ... 31
Clain JE ... 17
Comba P ... 37
Contreras CE ... 23
Cordes U ... 14
Damm M ... 29
Dartois M ... 31
Dauver A ... 31
David P ... 31
Davis CS ... 15
Davy A ... 31
Delmas P ... 31
Delorme B ... 31
Delzell E ... 41
Derobert L ... 31
Dhermies J ... 31
Diebold J ... 31
Duquesnoy N ... 4
Durbec JP ... 36
Duris I ... 7
Dzihniszewski G ... 27
Edling C ... 37
Elgjo RF ... 32
Ellis FH ... 24
Falter E ... 47
Ferrucci JT ... 1
Flodin U ... 37
Franco D ... 45
Franti CE ... 40
Frenning B ... 39
Fridman EG ... 6
Georgi M ... 14
Glanzman SL ... 16
Go VL ... 15
Go VL ... 16
Gogler H ... 28
Goodfriend T ... 29
Grabbe E ... 5
Grases PJ ... 23
Gunther R ... 14
Gustavsson A ... 39
Hall DA ... 1
Happ J ... 14
Harned RK ... 34
Hartmann G ... 10
Heim U ... 10
Heitz PU ... 19
Hellerer O ... 47
Hisamichi S ... 33
Hoat J ... 8
Hogstedt C ... 39
Hollinger A ... 30
Holly D ... 7
Howard FM ... 35
Itakura M ... 20
Ito H ... 18
Ito H ... 48
Iwai S ... 33
Iwamura K ... 20
Jacob J ... 31
Jobard P ... 31
Josso A ... 31
Joubaud F ... 31
Jussawalla DJ ... 43
Justum AM ... 31
Kaalhus O ... 32
Kamiguchi H ... 20
Kasper M ... 19
Katsunuma T ... 20
Kellershohn C ... 4
Kivirikko KI ... 13
Kloppel G ... 19
Kobari M ... 21
Kobler E ... 10
Kojima K ... 26
Kosako Y ... 48
Koska M ... 7
Kraus JF ... 40
Krause U ... 14
Krautzberger W ... 28
Kummerle F ... 14
L'Hintre M ... 31
L'Hirondel C ... 31
Lancien G ... 31
Langholm R ... 32
Laroche C ... 31
Launois B ... 31
Le Bodic L ... 31
Le Bodic MF ... 31
Lee JK ... 2
Leguene B ... 31
LemevelB ... 31
Levitt RG ... 2
Lewis J ... 41
Li MH ... 44
Louvet M ... 31
Mack E ... 29
Malagelada JR ... 15
Malagelada JR ... 16
Mandard P ... 31
Marchand P ... 31
Marionneau J ... 31
Marks PA ... 42
Marton P ... 32
Matolo NM ... 3
Matos V M ... 23
Matsuda Y ... 21
Matsuno S ... 21
Matsuzaki S ... 20
McNeish AS ... 35
Medline A ... 50
Melsom H ... 32
Metman EH ... 31
Metzger U ... 30
Mikulecky M ... 7
Miwa H ... 26
Mo ... 31
Monson RR ... 41
Montgomery FU ... 5
Morin J ... 45
Motoyama T ... 46
Mueller PR ... 1
Mugitani H ... 22
Muller M ... 12
Nagai Y ... 46
Nakagami K ... 18
Naruki Y ... 22
Natekar MV ... 43
Neff CC ... 1
Neptune WB ... 24
Neuberger JS ... 38
Newman B ... 40
Noel H ... 8
O'Connell RC ... 1
O'Fallon WM ... 15
Ochoa M ... 23
Ohtsuka S ... 22
Orita K ... 26
Paraf A ... 4
Parker R ... 49
Peiper HJ ... 25
Peters H ... 11
Polak JM ... 19
Polterauer P ... 12
Pouliadis G ... 30
Preac-Mursic V ... 47
Rahier J ... 8
Ribi E ... 49
Rode L ... 32
Rottenberg VI ... 6

Ruedi Th.	10
Sagel SS	2
Sakakibara K	46
Sarles H	36
Sato T	21
Savolainen ER	13
Schmutziger P	10
Schwartzman S	49
Shimamato F	18
Shimamoto F	48
Shinbo T	22
Simeone JF	1
Slesareva IuG	6
Stadalnik RC	3
Stanley RJ	2
Sugawara N	33
Sumii K	18
Sumiyoshi H	48
Suzuki M	22
Suzuki T	46
Syrota A	4
Tahara E	18
Tahara E	48
Takayama K	49
Taniyama K	48
Thelen M	14
Tryzelaar JF	24
Tsurumi T	26
VanSonnenberg E	1
Von Bulow M	27
Wallon J	8
Wanless IR	50
Watanabe H	46
Weyman PJ	2
Williams SM	34
Wittenberg J	1
Wright H	23
Yamagata S	33
Yamamoto M	18
Yanbe T	33
Yeole BB	43
Zaviacic M	7
Zollikofer C	30

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield,-Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

U.S.MAIL

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

CT 19/82/09

NCI/ICRDB/CT19 82/09

PB82-939409

NEWARK PUBLIC LIBRARY
NOV 8 1982
U.S. GOVT. PUBS
DEPOSITORY 376

INTERNATIONAL CANCER RESEARCH DATA BANK

ICRDB

CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/09

SEPTEMBER, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

PDQ (PROTOCOL DATA QUERY) - A NEW ONLINE CANCER DATABASE WILL BE AVAILABLE THIS FALL! PDQ LISTS THERAPY PROTOCOLS PLUS ADDRESSES AND PHONE NUMBERS OF CLINICAL INVESTIGATORS. CONTACT ICRDB FOR DETAILS.

In this issue:

- SCREENING AND DIAGNOSIS 1-4
- PATHOLOGY, STAGING, AND PROGNOSIS 5-9
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS 10-22
- SURGICAL AND RADIATION THERAPY 23-30
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY 31-32
- SELECTED CLINICAL CORRELATIONS 33-42
- REHABILITATION ASPECTS 43-52
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER 53-63
- SELECTED PRE-CLINICAL STUDIES 64-73

SCREENING AND DIAGNOSIS

1. REAL-TIME SCANNING AS AN ADJUNCT TO CONVENTIONAL HEPATIC SONOGRAPHY.

Eftekhari F, Barnes PA, Thomas JL, Bernardino ME
Dept. Diagnostic Radiology, Univ. Texas Cancer Center, M.D. Anderson Hosp. and Tumor Inst., Texas Medical Center, Houston, TX, 77030
Tex Med; 78(5):61-66 1982

We used real-time ultrasonography and B-scanning to examine nine patients - each of whom had primary neoplastic disease - for hepatic disease or for evaluation of therapy for meta-

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20.3173/2:

static disease. At least one lesion not detected by B-scan was found in each of the patients by real-time scanning, and in five patients with normal B-scans, real-time scanning revealed focal lesions. Three brief case reports illustrate the effectiveness of combining real-time ultrasonography and B-scanning in the diagnosis of selected cases. (Author abstract) (10 Refs)

2. DYNAMIC CT OF HEPATIC MASSES WITH INTRAVENOUS AND INTRAARTERIAL CONTRAST MATERIAL.

Moss AA, Dean PB, Axel L, Goldberg HI, Glazer GM, Friedman MA
Dept. Radiology, S-358, Univ. California, San Francisco, San Francisco, CA, 94143
AJR; 138(5):847-852 1982

Seven patients with primary and metastatic hepatic tumors had dynamic computed tomographic scans obtained after an intravenous and an intrahepatic arterial bolus of contrast media. Four patients had hepatoma and three had hepatic metastasis from either a colonic, pancreatic, or leiomyosarcoma primary malignancy. Computed tomography was also performed after an intravenous drip infusion of contrast material. Time-density curves of the hepatic lesions after contrast administration were analyzed and compared. The results demonstrated that (1) intrahepatic arterial delivery of contrast fluid resulted in the greatest contrast enhancement of lesions and detected more lesions than the intravenous bolus technique, which was superior to the drip infusion technique; (2) no consistent difference in the pattern of contrast enhancement was found between various hepatic lesions; (3) within multiple lesions of similar pathology in any one liver, a spectrum of contrast enhancement pattern was found; and (4) changes in contrast enhancement occurred rapidly and lesions changed from hypodense to isodense to hyperdense to isodense within 30-45 sec. (Author abstract) (11 Refs)

3. SPONTANEOUS RUPTURE OF HEPATIC AND SPLENIC ANGIOSARCOMA DEMONSTRATED BY CT.

Mahony B, Jeffrey RB, Federle MP
(c/o Jeffrey) Dept. Radiology, Univ. California Sch. Medicine, San Francisco General Hosp., 1001 Potrero Ave., San Francisco, CA, 94110
AJR; 138(5):965-966 1982

Spontaneous rupture of hepatic and splenic angiosarcoma was demonstrated by computed tomography in a 57-yr-old woman who had a 1-wk history of right upper quadrant pain and was admitted in hypovolemic shock. At surgery approx 2 liters of ip blood with active bleeding from the lesion in the left liver lobe were noted. A small subcapsular hematoma of the spleen had partially ruptured and a splenectomy was performed. Microscopic examination of both the hepatic and splenic lesions revealed angiosarcoma. The differential diagnosis of angiosarcoma and cavernous hemangioma is discussed; each disease demonstrates a pattern of delayed peripheral enhancement upon computed tomography. (12 Refs)

4. THE VALUE OF A PORTAL STUDY IN DETERMINING THE ETIOLOGY OF HEPATIC MASSES IN THE ADULT.

Roche A, Schmit P, Medina F, Raynaud A, Lacombe P
Dept. Radiology, Hopital de Bicetre, Univ. Paris South, 78 rue du General Leclerc, 94 270 Kremlin-Bicetre, France
Radiology; 143(2):387-393 1982

The intrahepatic portal system was studied by superior mesenteric angiography in 80 patients with hepatic masses. The portal study helped to identify the highly significant portal signs of malignancy (amputations, irregular stenosis, portal hypertension), and, among the malignant tumors, the specific signs of hepatoma (portal trunk amputation, ill-defined hepatographic lacunae, association of portal hypertension with proximal portal amputation). It is concluded that the intrahepatic portal study is essential in pretherapeutic staging. It is better than superselective hepatic arteriography in assessing the involvement of one hepatic lobe when a hypervascular tumor involves the other lobe, and it is indispensable if embolization is planned. (Author abstract) (22 Refs)

PATHOLOGY, STAGING, AND PROGNOSIS

5. EARLY PROLIFERATIVE CHANGES IN GASTROINTESTINAL NEOPLASIA.

Deschner EE
Lab., Digestive Tract Carcinogenesis, Memorial Sloan Cancer Center, 1275 York Ave., New York, NY, 10021
Am J Gastroenterol; 77(4):207-211 1982

The proliferative behavior of mucosal epithelium is reviewed in relation the development of gastrointestinal cancer. An enlarged proliferative compartment has been recognized among individuals with a previous history of colon cancer, those with an isolated polyp, asymptomatic relatives of familial polyposis patients, those with ulcerative colitis, and even some members of the general population. Mucosa of patients with a previous history of colon cancer may show both extension of the proliferative compartment to the luminal surface (Stage I defect) and a shift in the major zone of DNA synthesis from the lower third of the gland to the middle and upper portion of the crypt (Stage II defect). Studies of 1,2-dimethylhydrazine-induced colon carcinogenesis in mice indicate that Stage II abnormalities are predictive of the development of cancer. Distribution of DNA synthesizing cells among patients belonging to several high risk groups is presented. Only 30% of the patients showed a completely normal proliferative pattern. Changes in proliferative patterns over time are described for two asymptomatic members of polyposis coli families. Histologically normal mucosa from patients with a previous history of neoplasia may show crypts with extremely elevated labeling indices. The importance of such crypts is discussed. Correlation of an abnormal proliferative pattern with the type of tumor that will emerge is described. The impact of a diet rich in animal and dairy fats is considered. (16 Refs)

6. DISSEMINATED INTRAVASCULAR COAGULATION IN AUTOPSY CASES: ITS INCIDENCE AND CLINICO-PATHOLOGICAL SIGNIFICANCE.

Imamura T
Dept. of Pathology, Kyushu Univ., Faculty of Medicine, Fukuoka 812, Japan
Fukuoka Igaku Zasshi; 73(1):15-33 1982

Of 4,906 autopsy, 319 cases (6.5%) were determined or suspected of disseminated intravascular coagulation (DIC). DIC frequency for carcinoma (CA) was 7.3%, among this 16.3% were CA of the kidney, 13.3% CA of the esophagus, 12.0% CA of the pancreas, and 8.9% CA of the stomach. DIC frequency for cases with hematopoietic disease was 48% which included 16.7% of acute promyelocytic leukemia, 15.5% of acute myelocytic leukemia, and 10.0% of malignant lymphoma. Of the 88 cases pathologically diagnosed as DIC, 40 cases were CA and 17 cases were hematopoietic diseases such as leukemia and lymphoma. The relationship between occurrence of microthrombi and cancer was discussed. (67 Refs) (In JPN)

7. STUDIES ON THE CAUSES OF DEATHS FROM ESOPHAGEAL CARCINOMA.

Isono K, Onoda S, Ishikawa T, Sato H, Naksyama K
Second Dept. Surgery, Chiba Univ., Sch. Medicine, Inohana, Chiba, Japan
Cancer; 49(10):2173-2179 1982

Statistics on the causes for deaths of 638 patients operated on in our department for resection of cancer of the intrathoracic esophagus (squamous cell carcinoma) during the period from 1959-1979 showed that the major causes for direct operative deaths were pyrothorax, pulmonary complications, failure of the sutures, and postoperative hemorrhage. Among operation survivors, recurrence was the most frequent cause of death, responsible for the deaths of as many as 80% of less-than-5-yr survivors; and recurrence in the cervical, supraclavicular fossa, and superior mediastinal lymph nodes and that in the other organs were the frequent causes for the deaths of 2-to 3-yr survivors. Pulmonary complications were the causes for the deaths of 50%, and recurrence for the deaths of 30% of 5-to 10-yr survivors. Recurrence in the digestive organs other than the esophagus and cardiovascular diseases were the frequent causes for the deaths of more-than-10-yr survivors, while none of these survivors died of recurrence. (Author abstract) (8 Refs)

8. CARCINOMA OF THE GALL BLADDER.

Ozsoy Z, Hild P, Dobroschke J
Klinik fur Allgemein- und Thoraxchirurgie, Universitat Giessen, Klinikstrasse 29, D-6300 Giessen, W. Germany
Med Welt; 33(14):509-510 1982

Among 2,588 patients undergoing cholecystectomy, carcinoma of the gall bladder was diagnosed in 63 (17 men, 46 woman: 45-81 yr old, mostly 60-75 yr old). Gall bladder pain was reported in the carcinoma patients, lasting greater than 1 yr in 50% of the patients and greater than 1 mo in 33%. Signs and symptoms included pain in the upper right abdomen (66%), jaundice (68%), loss of wt (41%), recurrent colic (30%), and vomiting (21%). A history of gall stones was indicated in 62% of the patients. Cholecystolithiasis was found intraoperatively in 51 of the patients. Six patients were free of stones; presence of stones could not be determined in six other patients, due to inoperability. Surgery was limited to exploration in 33% of the patients, due to inoperability. Seven patients underwent removal of the gall bladder alone. Biliodigestive anastomosis was performed in 17 patients. Five patients underwent gastroenterostomy. Radical surgery was extended for three patients, due to hepatic infiltration. Tumor was limited to the gall bladder in only two patients. Metastases were found in the liver in 79% of the patients, in the hepatoduodenal ligament in 37%, and in the pancreatic head or right flexure of the colon in 13%. Postoperative lethality was 22%. Av survival time was 5.8 mo. (11 Refs) (In GER)

9. CARCINOID TUMORS. A 37-YEAR EXPERIENCE.

Zeitels J, Naunheim K, Kaplan EL, Straus F
(c/o Kaplan) Dept. Surgery, Univ. Chicago, Box 402, 950 E. 59th St., Chicago, IL, 60637
Arch Surg; 117(5):732-737 1982

We analyzed 101 cases of carcinoid tumor in patients treated at the University of Chicago hospitals between 1942 and 1979. Tumors occurred most commonly in the rectum (29%) and ileum (28%). Only 12% were appendiceal. More than 60% were less than 1 cm, and 43% were confined to the submucosa. These factors led to favorable prognoses. Twenty-three percent of the tumors were greater than 2 cm in diameter; 70% of them had metastasized, compared with only 6% of lesions less than 1 cm. Metastases were present in 46% of ileal and 40% of colonic lesions. None of 13 bronchial and only one of 12 appendiceal lesions demonstrated this spread. Carcinoid syndrome was noted in three cases. A second neoplasm was present in 22%. The corrected 5-yr survival rate was 87% overall, 95% without metastases, 83% with positive regional lymph nodes, and only 40% with distant spread. (Author abstract) (24 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

10. ALPHA-FETOPROTEIN AND CARCINOEMBRYONIC ANTIGEN IN PANCREATOBILIARY DISEASE WITH AND WITHOUT JAUNDICE.

Satake K, Cho K, Umeyama K
First Dept. Surgery, Osaka City Univ. Medical Sch., Asahi-Machi, Abeno-Ku, Osaka 545, Japan
J Surg Oncol; 19(4):228-232 1982

A comparative study of alpha-fetoprotein (AFP) and carcinoembryonic antigen (CEA) in serum was made by radioimmunoassay in 66 patients with pancreatobiliary disease with and without obstructive jaundice, biliary concentrations of these proteins were assayed in 12 patients with benign and 7 patients with malignant disease. There was no statistical difference in serum AFP between these two groups but there was a difference in serum CEA. Although CEA and AFP in bile in both groups were higher than in serum there was no statistical difference in serum CEA and AFP in patients with and without obstructive jaundice in either benign or malignant disease. In benign disease, patients with inflammation had higher serum CEA than normal. Although there was no statistical difference in serum CEA in patients with and without liver metastases, the serum CEA in liver metastases was significantly higher than in benign disease. We concluded that AFP is unlikely to be important in the assessment or management of patients with cancers other than those derived from the liver or yolk sac, and that the elevation of serum CEA in patients with malignant pancreatobiliary disease either with or without obstructive jaundice occurs mainly in the presence of widespread malignancy, especially in liver metastases. (Author abstract) (5 Refs)

11. A CORRELATIVE STUDY OF CARCINOEMBRYONIC ANTIGEN (CEA) RADIOIMMUNODETECTION (RAID) IN THE EVALUATION OF HEPATIC METASTASES (MEETING ABSTRACT)

Goldenberg DM, Kim EE, Bennett SJ, Shah U, Nelson MO, DeLand FH
University of Kentucky Medical Center, Lexington, KY, 40536
Proc Am Soc Clin Oncol; 1:C-391 1982

Twenty-nine patients with histologically-confirmed liver metastases from diverse cancer types were evaluated retrospectively by liver function tests, such as SGOT and Alk Pase, plasma CEA, colloid scans of the liver (RN), ultrasonography (US) in 14 patients, computed tomography (CT) in 8, and by CEA-RAID. In the RAID studies, the patients received iv infusions of 1-2.5 mCi of 131-I-labeled CEA antibody IgG containing about 250 ug of antibody protein. Images of the chest and abdomen were made usually at 24 and 48 hrs and nonspecific background activities were removed by computer-assisted subtraction of 99m-Tc images. CEA-RAID was capable of revealing cancers in the liver in 97% of the cases; circulating CEA did not appear to affect the success of tumor RAID. CT scans were positive in 75% of the small series of 8, while US had a 79% sensitivity in 14 patients. Liver RN scans showed 20 of 27, or 85%, true-positives. Thus, CEA-RAID was able to complement these other methods used to disclose liver metastases. In terms of liver function and CEA tests, SGOT was elevated in 59% of the cases, Alk Pase in 69% and CEA in 72-93%, depending upon the cutoff. CEA-RAID was consistently positive in patients with CEA titers below 10 ng/ml (8/29). CEA-RAID can reveal hepatic metastases even when other modalities, such as liver colloid scans, are negative or equivocal, and also appears to be a more sensitive indicator of liver involvement than the plasma CEA test. (no Refs)

12. PLASMA PROTEIN PROFILES AND PROGNOSIS IN GASTRIC CANCER.

Rashid SA, O'Quigley J, Axon AT, Cooper EH
Unit Cancer Res., Univ. Leeds, Leeds, England
Br J Cancer; 45(3):390-394 1982

In 104 patients with gastric cancer the serum proteins carcinoembryonic antigen (CEA), C-reactive protein (CRP), alpha 1-acid glycoprotein (AGP) (orosomucoid) and alpha1-antichymotrypsin (ACT) were measured pre-operatively. The estimated median survival of patients with both raised CEA and ACT was only 5 weeks in contrast to 64 wk for those with both proteins normal. An intermediary group with one of these proteins raised and the other normal had an estimated median survival of 15 wk. Similar results were obtained by considering a combination of CEA with either AGP or CRP. For these data the results were not explicable in terms of associations between survival time and patient's age, stage, operative procedure, histological classification or site of primary tumor. (Author abstract) (28 Refs)

13. TUMOR MARKERS IN CARCINOMA AND PREMALIGNANT STATES OF THE STOMACH IN HUMANS.

Skinner JM, Whitehead R
Dept. Pathology, Flinders Univ. South Australia, Bedford Park 5042, Australia
Eur J Cancer Clin Oncol; 18(3):227-235 1982

Tissue sections taken from areas of carcinoma, areas of intestinal metaplasia in stomachs bearing carcinoma and areas of intestinal metaplasia in stomachs showing atrophic gastritis only were examined for eight markers: a tumor-derived colon-specific antigen (tCSA), carcinoembryonic antigen (CEA), alphafetoprotein (AFP), pregnancy-specific beta-glycoprotein 1 (SP1), human placental lactogen (HPL), human beta chorionic gonadotrophin (beta-HCG), transferrin (TF) and ferritin (FE). In terms of the number of markers demonstrated in each of the three categories, there is a close similarity between the cells of adenocarcinoma and cells of intestinal metaplasia in cases of cancer, but not to similar metaplastic cells in atrophic gastritis cases. In addition, it appears that the presence of tCSA and SP1 is closely linked to carcinoma, though only approx half of such cases contain these markers. It would also appear that there are two types of morphologically identical intestinal metaplasia, one related to cancer, the other not. No difference was found between so-called intestinal type and diffuse type carcinomas. (Author abstract) (28 Refs)

14. THE ASSAY OF MICROSOMAL EPOXIDE HYDROLASE IN NORMAL AND PATHOLOGICAL HUMAN LIVER.

Craven AC, Walker CH, Murray-Lyon IM
(c/o Walker) Dept. Physiology and Biochemistry, Univ. Reading, Reading, England
Biochem Pharmacol; 31(7):1321-1324 1982

Samples of normal and pathological human liver were assayed for microsomal epoxide hydrolase activity using the chlorinated epoxide HEOM as substrate. The enzyme activity in liver samples from normal patients was 72.3 +-9.8 nmoles mg protein/min which is comparable to the highest values recorded in mammals, and much higher than those found in rats and mice. A microassay procedure was developed to enable the estimation of activity in needle biopsy samples (5-20 mg), obtained from patients with normal and diseased livers. Three epileptic patients who had received regular doses of phenobarbitone and/or phenytoin showed activities significantly higher than those found in all other samples (P less than 0.01). These appeared to be examples of enzyme induction. Assays were also performed on samples from six patients with alcohol-related liver disease and one patient with hepatocellular carcinoma. The role of epoxide hydrolase in the metabolism of carcinogenic epoxides is discussed in relation to these findings. (Author abstract) (18 Refs)

15. TOTAL CK ACTIVITY AND ISOENZYME PATTERNS IN NORMAL AND NEOPLASTIC TISSUE OF GASTROINTESTINAL TRACT.

Tsung SH
Dept. Pathology, Methodist Hosp. of Gary Inc., 600 Grant St., Gary, IN, 46402
J Clin Pathol; 35(2):204-206 1982

Total creatine kinase (CK) activity and isoenzyme distribution were determined in normal and tumor tissue of gastrointestinal (GI) tract. Total CK activity per gram wet tissue appeared to be markedly reduced in malignant tumor tissue, yet it was raised in benign tumor tissue. CK-BB was the predominant isoenzyme in both normal and tumor tissue of GI tract. Alteration of isoenzyme pattern was noted between the normal and tumor tissue. In one patient, macro-CK was found in tissue homogenate. (Author abstract) (11 Refs)

16. RECTAL CARCINOIDS AS TUMORS OF THE HINDGUT ENDOCRINE CELLS: A MORPHOLOGICAL AND IMMUNOHISTOCHEMICAL ANALYSIS.

O'Briain DS, Tischler AS, Dayal Y, Bendon R, DeLellis RA, Wolfe HJ
(c/o Wolfe) Dept. Pathology, Tufts Univ. Sch. Medicine, 136 Harrison Ave., Boston, MA, 02111
Am J Surg Pathol; 6(2):131-142 1982

A series of 13 human hindgut (rectal) carcinoid tumors was investigated for morphological features, peptide hormone content, and silver staining properties, and compared with normal rectal endocrine cells. Immunochemistry involved staining by peroxidase-antiperoxidase method followed by incubation with rabbit antibodies (antibovine pancreatic polypeptide (BPP), antihuman pancreatic polypeptide (HPP), antiglucagon (glucagon-like immunoreactivity, GLI), antisomatostatin (SRIF), antigastrin) and guinea pig anti-insulin 1. Overall, 85% of the tumors were positive, either by Grimelius (argyrophilia), immunohistochemical staining, or both. The hindgut carcinoids are similar to normal endocrine cells of the region; PP, GLI, SRIF, and other substances found in rectal carcinoids are also products of normal rectal endocrine cells. Secretory products of the multiple endocrine cell types indigenous to other gut areas are rarely if ever found in these tumors. These similarities strongly suggest a common origin of rectal carcinoids from normal rectal endocrine cells. The distinctive profile of hormonal and silver staining properties of rectal carcinoids has potential value at the cellular level as a specific marker of rectal or hindgut origin. (37 Refs)

17. ENDOCRINE PANCREATIC CARCINOMA AND SYNDROME OF INAPPROPRIATE SECRETION OF ANTIDIURETIC HORMONE.

Kleibeuker JH, Doorenbos H
Dept. Medicine, Univ. Hosp., Groningen, The Netherlands
Br Med J; 284(6324):1230-1231 1982

Inappropriate secretion of antidiuretic hormone in a 54-yr-old man disappeared following treatment with streptozotocin for endocrine pancreatic carcinoma. The patient had presented with abdominal pain, wt loss, and an upper abdominal mass. The islet-cell origin of the tumor was shown by Grimelius staining and electron microscopy. Disappearance of the syndrome following tumor shrinkage is compatible with a tumoral origin of the syndrome. (5 Refs)

18. THE ROLE OF TENNESSEE ANTIGEN IN THE DIAGNOSIS OF GASTROINTESTINAL MALIGNANCY.

Sampson J, Wong L, Harris OD
(c/o Harris) Gastroenterology Dept., Princess Alexandra Hosp., Woolloongabba 4102, Queensland, Australia
Aust NZ J Surg; 52(1):39-41 1982

Tennessee antigen (TAG) is a glycoprotein which has been extracted from adenocarcinoma of the colon. It is one of the numerous tumor associated antigens which has been developed and there is evidence that it differs considerably from carcinoembryonic antigen (CEA) preparations. A commercial kit using a hemagglutination inhibition assay is available and its ability to discriminate between benign and malignant conditions of the gastrointestinal tract has been studied, using 7.7 units/ml as the upper limit of normal. With upper gastrointestinal disease, discrimination is comparable to that achieved with TAG by other workers and also to that achieved with CEA. For gastric carcinoma TAG has a sensitivity of 71% and a specificity of 77%. With lower gastrointestinal tract disease discrimination was poor, TAG having a sensitivity of 76% but a specificity of 44% for colorectal carcinoma. Discrimination between pancreatic carcinoma and chronic pancreatitis was poor, TAG having a sensitivity of 100% for carcinoma and a specificity of 22%. (Author abstract) (8 Refs)

19. TISSUE POLYPEPTIDE ANTIGEN - A NEW TUMOUR MARKER?

Wagner W, Husemann B, Becker H, Groitl H, Koerfgen HP, Hammerschmidt M
Surgical Clinic, Univ. Erlangen-Nurnberg, 8520 Erlangen, W. Germany
Aust NZ J Surg; 52(1):41-43 1982

The possibility of using Tissue Polypeptide Antigen (TPA) as a tumor marker in the diagnosis and follow-up of patients with malignant tumors was reported. We have taken up these suggestions and examined the possible role of TPA as a tumor marker in gastric and colo-rectal carcinoma. TPA and CEA (Carcinoembryonic Antigen) values were determined in 39 patients with gastric and 60 patients with colo-rectal carcinoma. The tumors were histologically proven. The histological classification of the gastric carcinomas was carried out according to the recommendations of the AJC (American Joint Committee for cancer staging and end results reporting) and that of the colo-rectal carcinomas was according to Dukes. Fifty-two surgical patients with benign diseases were used as controls. In this group the incidence of false positive values was 15.3% for TPA and 23% for CEA. In gastric carcinoma 30 out of 39 patients (76.9%) had on elevated TPA level (medium 275.4 n/l), in contrast CEA was elevated in 18 out of 35 patients (46.1%, medium 24.6 ng/ml). In colo-rectal cancer the TPA level was increased in 61.6% ie 37 out of 60 patients (medium 260.2 n/l). Elevated CEA levels were detected in 38 out of 60 patients (63.6%, medium 192 ng/ml). The mean values of TPA and CEA rise with advancing tumor stages. Elevated TPA levels were also found in non malignant diseases. Possible sources of error are inflammatory reactions. Therefore increased TPA values should be considered indicative of neoplasia only if infections or inflammatory diseases can be excluded and the first value is confirmed by repeated examination. The high incidence of increased values in early tumor stages (Dukes A or AJC 1), seems to justify the inclusion of tests for these antigens into the diagnostic and follow-up routine of gastric and colorectal cancer. (Author abstract) (9 Refs)

20. RADIOIMMUNE ASSAY STUDIES USING A MONOCLONAL ANTIBODY TO DETECT AN ANTIGEN (DU-PAN-2) IN THE SERUM AND ASCITES OF ADENOCARCINOMA PATIENTS (MEETING ABSTRACT)

Daasch VN, Fernsten PD, Metzgar RS
Department of Microbiology and Immunology, Duke University Medical Center, Durham, NC, 27710
Proc Am Assoc Cancer Res; 23:1051 1982

DU-PAN-2 monoclonal antibody detects a non HLA membrane antigen with the antigenic determinant in the carbohydrate portion of the molecule. Treatment of antigen or reactive cells with neuraminidase destroys antigenic activity. The antigen is excluded from a Sepharose 6B column, indicating an apparent molecular weight of 10(6) or greater. Although the antibody was elicited to a pancreatic adenocarcinoma, it also reacts with malignant cells of some other adenocarcinoma-type tumors. An inhibition radioimmune assay was developed to detect soluble DU-PAN-2 antigen in serum and ascitic fluid. Antigen in the patient's fluid occupies binding sites of the DU-PAN-2 antibody, so that it no longer binds when transferred to insolubilized antigen. Strong inhibitory activity (greater than 80%) with a titer greater than 1:50 was noted with ascitic fluid from some pancreatic and ovarian cancer patients. Serum from most patients with pancreatic as well as some patients with ovarian, breast or colon adenocarcinomas demonstrated significant inhibitory activity. Serum and ascites from patients with non-malignant disease demonstrated little or no blocking activity. No inhibition was noted with purified carcinoembryonic antigen, sialic acid, or blood group antigens. Antigen levels from serial testing of sera of pancreatic and ovarian cancer patients correlated well with their clinical status. (no Refs)

21. PRESENCE OF HEPATITIS B SURFACE ANTIGEN BEFORE PRIMARY HEPATOCELLULAR CARCINOMA.

Nomura A, Stemmermann GN, Wasnich RD
Japan-Hawaii Cancer Study, Kuakini Medical Center, 347 N Kuakini St., Honolulu, HI, 96817
JAMA; 247(16):2247-2249 1982

In a study of 7,498 men of Japanese ancestry in Hawaii, 18 incident cases of primary hepatocellular carcinoma were identified after a follow-up period of 13 yr. Sixteen of the 18 patients had stored serum specimens available for analysis. Ten of the 16 had positive serum test results for hepatitis B surface antigen in their original specimens. None of 48 matched control subjects, whose stored serum specimens were also analyzed, had similar positive test results. This finding indicates that hepatitis B surface antigenemia preceded primary hepatocellular carcinoma in many patients. (Author abstract) (20 Refs)

22. HEPATITIS B VIRUS AND PRIMARY LIVER CANCER: DEMONSTRATION OF A CYTOPLASMIC TUMOR ANTIGEN IN THE TRANSFORMED HEPATOCYTE.

Romet-Lemonne JL, Barin F, Goudeau A, Maupas P
Institut de Virologie de Tours, Facultes de Medecine et de Pharmacie, 2bis, boulevard Tonnelle, 37000 Tours, France
C R Acad Sci [III] (Paris); 294(1):9-14 1982

The presence of tumor antigen was studied in human hepatoma cell line PLC/PRF/5 by indirect immunofluorescence and immunoperoxidase assay using antisera from 14 Senegalese patients with primary hepatocellular carcinomas. Ten of the 14 sera were HBs Ag-positive, 4/10 also HBe Ag-positive, 3/14 anti-HBsd antibody-positive and 1/14 anti-HBc antibody-positive. Twenty-two sera without hepatitis B virus markers from African Blood donors and from cancer patients were used as controls. Tumor antigen (HBV/T) was found in the cytoplasm of the human hepatoma cells. The same antigen was also detected in primary hepatocellular carcinoma tissues. The data obtained with serum and tissue controls indicate that the HBV/T Ag-anti-HBV/T system seems to be associated with the transformation of hepatocytes by hepatitis B virus. (15 Refs) (In FRE)

SURGICAL AND RADIATION THERAPY

23. CARCINOMA OF THE OPERATED STOMACH.

Schacht U, Borchard F, Kniemeyer H, Palomba PP
Chirurgische Klinik A, Moorenstrasse 5, 4000 Dusseldorf, W. Germany
Aktuel Chir; 17(2):63-65 1982

Seventy-one patients (66 men, 5 women; av age, 62), who had surgery because of benign gastric lesions and lesion-free periods greater than 5 yr before carcinoma of the gastric stump (CGS) was diagnosed, were included in this study. Sixty-six of the patients had the CGS and 5 had carcinoma at the site of gastroenterostomy. The av lesion-free period between the benign and malignant lesions was 24 yr. Of the 69 patients who underwent surgery, 22 had radical resection, 19 had palliative resection, and 28 had laparotomy. Surgical mortality was 19.1%. Survival was 50% after 3 mo and 5.2% after 5 yr. Five-yr survival of the patients who underwent radical surgery was 18.2%, or 26.7% of those who survived the surgery. Histologic examination of the gastric stumps did not indicate any significant difference between obligatory or facultative bile reflux. Incidence of the CGS was increased when the primary lesion was a duodenal ulcer. Relationships between the CGS and type of primary surgery, alkaline reflux, chronic gastritis, acidity, and exogenous carcinogens were discussed. (17 Refs) (In GER)

24. TREATMENT OF INTESTINAL OBSTRUCTION CAUSED BY INTRA-ABDOMINAL CARCINOMATOSIS (MEETING ABSTRACT)

Shatila AH, Mansour EG, Avellone JG
Cleveland Metropolitan General Hospital, Cleveland, OH, 44130
Proc Am Soc Clin Oncol; 1:C-265 1982

The treatment of Intestinal Obstruction (IO) caused by int
abdominal carcinomatosis (IAC) is controversial (medi
conservative vs surgical). This study was carried to establi
guidelines for treatment. Records of 45 patients treated for
caused by IAC were reviewed. There were 62 episodes of I
Primary origin of IAC was the GI tract in 53% and genit
organs in 24%. In 54 episodes of IO treated conservatively b
gastro-intestinal decompression, relief of IO occurred in 29.5
while in 32 episodes of IO treated surgically, relief of IO o
curred in 62.5%. Surgery was more effective in relieving th
IO. Both methods carried high morbidity and mortality wit
69% of patients dying during treatment or within 30 days post
operatively. Delaying surgery more than 48 hours afte
conservative treatment resulted in a 2 fold increase in mortality
and 1.5 increase in morbidity, and a significant drop in serum
albumin level. Postoperative intestinal fistulization, sepsis an
bronchopneumonia were the most frequent complications i
the delayed surgery group; while bronchopneumonia was the
most frequent complication in non-surgically treated and early
surgically treated groups. Surgical treatment is favored for the
treatment of IO caused by IAC if patient general condition
permits it. Avoiding delayed surgery and applying simple surgical procedures ie ileostomy or colostomy is recommended to
improve the outcome of surgery of the condition. (no Refs)

25. COMPARATIVE RADIOLOGICAL STUDIES OF DIFFERENT TYPES OF GASTRIC RECONSTRUCTION: ROUX-Y; LONGMIRE-GUETGEMANN; TUBINGER RECONSTRUCTION.

Wolf KJ, Goldberg HI, Kieninger G, Manolakis G
Med. Strahleninstitut der Univ. Tubingen, Rontgenweg 11, D-7400 Tubingen, W. Germany
ROEFO; 136(3):237-242 1982

The indications for gastrectomy are increasing. More than 50 operations have been devised for reconstruction of the gastric function, but none is ideal. They should be judged particularly by their ability to form a reservoir which permits intermittent emptying of food into the small bowel. The risk of ischemic changes or of chronic mucosal inflammation must be avoided. On the assumption that functional disturbances could be characterized by study of the morphology, we have carried out studies of three different types of gastric reconstruction (Longmire-Gutgemann, Roux-Y and Tubinger). The parameters we chose to measure were the maximum diameter of the interposed segment, the thickness of the mucosal folds and, as far as possible, the length of the segment. Most marked dilatation was found with the Tubinger procedure. Nevertheless, the increased occurrence of circular contractions following the Longmire-Gutgemann and Roux techniques may also result functionally in the formation of a reservoir. In none of the above techniques was there evidence of disturbances of blood-flow, as shown by mucosal swelling in the interposed segment. (Author abstract) (15 Refs) (In GER)

26. THE SURGICAL MANAGEMENT OF PRIMARY CARCINOMA OF THE LIVER.

Lee NW, Wong J, Ong GB
(c/o Ong) Univ. Surgical Unit, Queen Mary Hosp., Hong Kong, Hong Kong
World J Surg; 6(1):66-75 1982

Results of liver resection for primary hepatic carcinoma performed on 165/935 patients are reported. Hepatitis B surface antigen (HBsAg) was present in 78.4% of 328 tested patients. Surgical resection was contraindicated in intractable ascites, a delay greater than 10% at 45 min of the Bromosulphalein excretion test, and albumin below 3 g/100 ml. It is recommended that arteriograms be performed before resection. Technetium-99m scanning, hepatic angiography, computed tomography, and peritoneoscopy were useful in detecting and delineating tumor. Operative techniques discussed include abdominal exploration, left lateral segmental resection, left hemihepatectomy, left medial segmental resection, right hemihepatectomy, extended right hepatectomy, right subsegmentectomy, resection for ruptured hepatoma, and hepatic dearterialization. Complications occurred in 68 patients, 33 of whom died. An operative mortality rate of 20% was achieved. Median survival rate 10 mo compared to 1.1 mo for patients not treated by resection. Five yr survival was 20%, with one patient alive at 20 yr. (10 Refs)

27. TOTAL HEPATECTOMY AND LIVER REPLACEMENT (ORTHOTOPIC LIVER TRANSPLANTATION) FOR PRIMARY HEPATIC MALIGNANCY.

Iwatsuki S, Klintmalm GB, Starzl TE
Dept. Surgery, Univ. Pittsburgh, 1084 Scaife Hall, Pittsburgh, PA, 15261
World J Surg; 6(1):81-85 1982

Of 184 patients given orthotopic liver transplants from 1963-1980, 24 had a primary liver malignancy (12 men, 12 women; 15 hepatomas, 5 intrahepatic bile duct carcinomas, 1 each cholangiocarcinoma, hepatoblastoma, hemangioendothelial sarcoma, undetermined sarcoma). In three of these patients the finding was incidental (group I). In the other 21 patients, 8 died within 30 days from complications (group II) and 13 survived greater than 2 mo (group III). Two group I patients were alive at 3 and 11 yr; the third died from cardiac arrest shortly after operation. In group II, 7/8 patients were tumor-free at postmortem. In group III, 7/10 patients with recurrence died from the disease, 2/10 patients died from other causes, and 1 patient transplanted with pleural and peritoneal metastases was alive at 4 yr. Of the three patients not developing metastases two died shortly after operation (3 and 6 mo), and the third was alive at 10 mo. In addition to the eight patients from group II, one patient in group I died from postoperative complications, for an operative mortality rate of 37.5%. The 15 surviving patients had 1-, 2-, and 3-yr survival rates of 53%, 38%, and 29% respectively. These results are inferior to those obtained with conventional subtotal hepatic resection. There may be indications for this procedure in carefully selected patients. (5 Refs)

28. PANCREATICODUODENECTOMY. A 40-YEAR EXPERIENCE.

Cohen JR, Kuchta N, Geller N, Shires T, Dineen P
(c/o Dineen) Dept. Surgery, New York Hosp., Cornell Medical Center, 525 East 68th St., New York, NY, 10021
Ann Surg; 195(5):608-617 1982

One hundred six pancreaticoduodenectomies, including 10 cases done for benign disease were reviewed, retrospectively, and 51 factors analyzed. There is a significant difference in survival based upon final pathologic diagnosis. Five-yr survivals were 0% for adenocarcinoma of the pancreas, 38% for duodenal carcinoma, 24% for CBD carcinoma, 30% for ampullary carcinoma, 24% for other cancers not considered part of the ampullary region, and 100% for those with benign disease ($X2 = 24.66$, $df = 5$, $p = 0.0002$). Four statistically significant poor prognostic factors were identified, including age greater than 51 yr, serum bilirubin level greater than 6 mg/dl, SGOT greater than 100, and a previous drainage procedure. Results of this study seem to indicate that the pancreaticoduodenectomy has limited indications in adenocarcinoma of the pancreas, but remains the procedure of choice for all other periampullary lesions including suspicious lesions with a negative biopsy at the time of surgery. (Author abstract) (23 Refs)

29. CARCINOMA OF THE PAPILLA OF VATER.

Russell DM, Roberts-Thomson IC, Macrae FA, Kune GA, Sherson ND
(c/o Roberts-Thomson) Dept. Gastroenterology, Royal Melbourne Hosp., Post Office, Victoria 3050, Australia
Aust NZ J Surg; 52(1):44-47 1982

Carcinoma of the papilla of Vater was diagnosed in 18 patients during the period 1970 to 1980. In 10 patients, surgical treatment was facilitated by a preoperative diagnosis based on duodenal endoscopy, biopsy, cytology and retrograde cholangiopancreatography. Of 16 patients with apparently localized disease at laparotomy, 9 had pancreatoduodenectomy (Whipple's operation), 3 had local resection and 4 had biliary bypass. Six of nine patients treated by pancreatoduodenectomy are surviving for periods ranging from 1 to 10 yr, mean 4 yr, whereas the four patients treated by biliary bypass survived for 0 to 18 mo. Tumor recurred in the region of the papilla in two of three patients treated by local resection. Carcinoma of the papilla of Vater is usually localized at the time of diagnosis and prolonged survival can be achieved by pancreatoduodenectomy. (Author abstract) (14 Refs)

30. CARCINOMA OF THE ESOPHAGUS. OBSERVATIONS OF 40 YEARS.

Parker EF, Gregorie HB, Prioleau WH, Marks RD, Bartles DM
Medical Univ. South Carolina, 171 Ashley Ave., Charleston, SC, 29403
Ann Surg; 195(5):618-623 1982

The long-term results of treatment of primary carcinoma of the esophagus continue to be poor, and attempts to improve them remain as challenging as any that exist in the field of malignant neoplasia today. Even so, there has been improvement, and this report contrasts age, race, sex, levels of involvement, methods of treatment, and results in our first series of 170 cases, seen between 1940 and 1951, with those in our last series of 300 cases, seen between 1967 and 1975. In the latter group, among those treated by megavoltage radiation as the sole theoretically curative method, the 5-yr survival rate was 1.0%. Among operable patients, there were 15 who had resection without preliminary radiation, with a mortality rate of 40% (6/15), a 2-year survival rate of 13% (2/15), and a 5-year survival rate of 7.0% (1/15). Also among operable patients, there were 75 who had resection following radiation therapy with a mortality rate of 19% (14/75), a 2-yr survival rate of 20% (15/75), and a 5-yr survival rate of 10% (7/75). These rates contrast with a 5-yr survival rate of 0.5% in the 1940-1951 series. Improvements in methods of treatment and adjuncts, such as nutrition, radiation, and operation, are cited. Even so, results in our last group did not show improvement over those in the 1962-1967 series. Therefore, we have begun a new program involving the use of chemotherapy in conjunction with radiation therapy and resection in those cases in which it may be applicable. (Author abstract) (10 Refs)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

31. TRANSAXILLARY HEPATIC ARTERY CHEMOTHERAPY USING AN IMPLANTED DRUG PUMP (MEETING ABSTRACT)

Cohen AM, Wood WC, Greenfield A
Massachusetts General Hospital, Boston, MA, 02114
Proc Am Soc Clin Oncol; 1:C-348 1982

The objective of this study was to evaluate the feasibility of integrating an implantable, refillable drug infusion pump with transaxillary angiographic hepatic arterial catheterization. The implantation is performed under local anesthesia in the radiology suite. A 2-3 cm incision in the left upper arm is made through skin and subcutaneous tissue. Through an axillary artery puncture, a 5.3F polyethylene catheter is fluoroscopically placed into the hepatic artery. To minimize gastroduodenitis, the gastroduodenal artery is occluded with a Gianturco coil and Gelfoam. The Model 400 Infusaid pump is implanted in the upper chest and attached subcutaneously to the angiography catheter using a friction connector. Patients are discharged 2-3 days later. Over a 2 year period, 20 such implants have been performed. Fluorodeoxyuridine (FUdR) has been used by continuous infusion; Mitomycin-C (MMC) and carmustine (BCNU) by intermittent intra-arterial infusion. The pump/catheter system has been left in place for as long as 18 months. Partial responses in the colorectal cases are as follows: FUdR 4/9, MMC 2/3, FUdR + MMC 1/1, FUdR + MMC + BCNU 3/3. No arm vascular complications, hepatic arterial occlusions, peripheral emboli, pump malfunctions, or catheter occlusions took place over a total experience of 3,210 patient days. Three catheter migrations occurred requiring repositioning in 2, and 3 cracked catheters required replacement. This innovative approach offers a comfortable, convenient method for long-term ambulatory hepatic arterial chemotherapy obviating both laparotomy and extra-corporeal pumps. (no Refs)

32. DTIC THERAPY FOR MALIGNANT ISLET CELL TUMORS (MEETING ABSTRACT)

Kessinger A, Foley JF, Lemon HM
University of Nebraska Medical Center, Omaha, NE, 68105
Proc Am Soc Clin Oncol; 1:C-658 1982

Five patients with malignant islet cell tumors were treated with dacarbazine (DTIC). One patient had a non-functioning tumor, two patients had glucagonoma syndrome, one patient had a gastrinoma, and one had glucagon hypersecretion without the syndrome. Benefit from therapy occurred in all patients. One patient with glucagonoma syndrome (rash, diabetes mellitus, elevated plasma glucagon) had disappearance of the syndrome, normalization of plasma glucagon and has been in remission for 52+ months. A second patient with glucagonoma syndrome gained 15 kilograms, plasma glucagon fell from 2,810 pg/ml to 418 pg/ml with an improvement in liver scan, and has been in remission for 9+ months. The patient with a gastrinoma also had glucagon hypersecretion and after DTIC treatment was begun, gained 10 kg, plasma glucagon fell from 281 pg/ml to 125 pg/ml, and his Karnofsky index rose from 4 to 9. His remission continues into its 14th month. The patient with a glucagonoma without the syndrome had a normalization of his plasma glucagon level, disappearance of pain and a slight decrease in size of his pancreatic mass. His remission continues into its 38th month. The patient with a non-functioning tumor had a near doubling of the size of her metastases the month before DTIC was begun. After DTIC was started, the disease stopped growth for 37 months before it began to grow rapidly again resulting in her death one month later. There are 3 cases of islet cell carcinoma responding to DTIC in the literature. (3 Refs)

SELECTED CLINICAL CORRELATIONS

33. TRIPLE EARLY GASTRIC CANCER: REPORT OF A CASE.

Okamura S, Nakano H, Itoh M, Nakajima A, Horiguchi H, Yamauchi M, Yatani A, Nagata K, Koshiyama H, Yamamoto J, Oda T, Kamiya O, Miura K, Kawaseki K, Kondo H, Miyakawa H, Iwaseki K
Dept. Internal Medicine, Fujita-Gakuen Univ. Sch. Medicine, Toyoake, Japan
I To Cho; 17(3):293-298 1982

A Type IIa + IIc early cancer on the posterior wall of the antrum and both Type IIa + IIc and Type IIc early cancers on the anterior wall of the angulus occurred in a 68-yr-old woman who had been followed-up for 9 mo for a polypoid lesion in the antrum. The patient's father had gastric cancer, and the patient's mother had uterine cancer. The patient had had surgery for uterine cancer 9 yr prior to diagnosis of the gastric cancers. The stomach was resected, and the lesions were observed to be independent; all three cancers were well differentiated adenocarcinomas. This was considered to be a rare case of triple early stage gastric cancer. Importance of visualization of the fine structure of the surface of the stomach with x-ray, endoscopic examination, biopsy, and determining the size of the cancerous lesion during diagnosis were emphasized. (11 Refs) (In JPN)

34. CASE OF DOUBLE CANCER OF THE STOMACH.

Ito S, Mochizuki F, Matumoto K, Ikeda T, Fujita N, Kaneko YJ, Mori T, Takahashi R, Yamae Y, Sugahara N, Shirane A
Dept. Internal Medicine, Sendai City Medical Center, Sendai, Japan
I To Cho; 17(3):281-286 1982

A case of double cancers of the stomach occurred in a 69-yr-old woman presenting with pain in the left upper abdominal region. The patient's father had died from gastric cancer and the patient's mother had died from rectal cancer. Two depressed lesions, one on the anterior wall of the upper gastric corpus and one on the posterior wall of the antrum, were diagnosed malignant with x-ray and gastrofiberscopy. Surgery was performed, and examination of the resected specimens showed two Type IIc early cancers; one was tubular adenocarcinoma (TA) invading the submucosa and one was TA limited to the mucosa. Multiple gastric cancers of the antrum and gastric corpus were not thought to be very common. (8 Refs) (In JPN)

35. SEEDING OF PANCREATIC CARCINOMA ALONG THE TRANSHEPATIC CATHETER TRACT.

Kim WS, Barth KH, Zinner M
Dept Radiology, Johns Hopkins Hosp., Baltimore, MD, 21205
Radiology; 143(2):427-428 1982

An implant metastasis developed along the tract of a transhepatic biliary drainage catheter 4 mo after its initial placement for relief of common bile duct obstruction by carcinoma of the pancreas. The catheter was in place for 22 days and had been removed during a Whipple procedure. This is the third such reported incident related to percutaneous biliary drainage. (Author abstract) (26 Refs)

36. NEUROFIBROMA OF THE SMALL INTESTINE IN RECKLINGHAUSEN'S DISEASE AS THE CAUSE OF RECURRENT GASTROINTESTINAL BLEEDING.

Lohrmann A, Kottmann F, Donhuijsen K, Goebell H, Weichert HC
Abteilung fur Gastroenterologie, Medizinische Universitatsklinik, Hufelandstr. 55, D-4300 Essen 1, W. Germany
Leber Magen Darm; 11(3):132-135 1981

Chronic gastrointestinal bleeding in a 66-yr-old woman with Recklinghausen's disease (RD) is reported. Angiography revealed a neurofibroma of the small intestine. Bleeding stopped after removal of the tumor, which was ulcerated. Endoscopic examination of patients with RD is recommended, and angiography is recommended when involvement of the small intestine is suspected. Exploratory surgery is indicated when endoscopy and radiological studies fail to disclose the source of bleeding. (14 Refs) (In GER)

37. METASTATIC DISEASE IN THE LIVER FROM COLORECTAL CANCER: AN APPRAISAL OF LIVER SURGERY.

Bengmark S, Hafstrom L, Jeppsson B, Jonsson PE, Ryden S, Sundqvist K
(c/o Hafstrom) Dept. Surgery, Univ. Lund, S-221 85 Lund, Sweden
World J Surg; 6(1):61-65 1982

Thirty-two patients with colorectal cancer underwent liver resection; 12 had solitary liver metastases, 16 had two or more, and the number was unrecorded in 4. In seven patients, enucleation of one or two solitary liver metastases was performed. Eighteen of the patients had synchronous metastases and 14 had metachronous metastases. Of the patients enucleated, metastases were synchronous in six and metachronous in one. The median interval between primary cancer and surgery in patients with metachronous metastases was 16 mo, mean 30 mo. Median survival of the 18 resected patients with synchronous metastases was 21 mo (mean 27 mo), and of the 12 resected patients with metachronous metastases 16.5 mo (mean 20 mo). Median survival of the 12 patients with a single metastasis was 25 mo (mean 33, range 11-102), and for the 16 with two or more metastases it was 17 mo (mean 19, range 3-71). Of the patients treated by enucleation, three were still alive at 40, 41, and 108 mo, and four died at 2, 3, 28, and 65 mo, respectively, postoperatively. Complications occurred in 10 patients overall, including 2 deaths. Cytostatic therapy was given to 18 patients. Overall, nine patients survived greater than 3 yr. Liver resection or metastasis enucleation may be useful in patients with colorectal cancer and liver metastases when the number of metastases is limited and no extrahepatic cancer is present. (25 Refs)

38. INTERMITTENT HEPATIC ARTERY PERFUSIONS FOR SYMPTOMATIC METASTATIC COLON CARCINOMA (MEETING ABSTRACT)

Hatfield AK, Kammer BA, Danley RA, Miller AG, Houston JG, Harder L
Carle Clinic Association, Urbana, IL, 61801
Proc Am Soc Clin Oncol; 1:C-395 1982

Twenty patients (pts) with colon carcinoma and symptomatic liver metastases received intermittent hepatic artery perfusions of 5-Fluorouracil (5-FU) and Mitomycin C given over a 5 day period. Only patients with serious liver involvement were chosen for therapy who had a limited life expectancy. Ten pts had previously received chemotherapy, 10 had not. Pts received Mitomycin C 0.2 mg/kg over 2 hours, followed by 5-FU 105 mg/kg over 120 hours. Pts initially received two perfusions 6 to 8 weeks apart. All pts were then followed with no maintenance chemotherapy. If symptoms returned pts were retreated until symptoms again disappeared. A total of 47 perfusions were given. Serious complications developed in less than 10% of perfusions. Overall, a 55% objective response rate was obtained. In previously untreated pts 90% responded, as compared to 28% in previously treated pts. Fifty percent of previously treated pts showed additional improvement, which did not meet standards for partial response used above. All responses were partial and no responses were complete. The median survival in all pts has been 14 months from the discovery of liver metastases and 8 months from the first liver perfusion. Fifty-five percent of our pts have developed symptomatic extraheptic sites of metastases which adversely influence a survival, but even in these pts the liver has been controlled as a site of disease in 54% until death from metastatic disease. This program has offered good palliation of pts symptoms and prolonged survival with a minimum of treatment. (no Refs)

39. TEMPORARY LIVER DEARTERIALIZATION IN PATIENTS WITH METASTATIC CARCINOID DISEASE.

Bengmark S, Ericsson M, Lunderquist A, Martensson H, Nobin A, Sako M
(c/o Nobin) Dept. Surgery, Univ. Lund, S-221 85 Lund, Sweden
World J Surg; 6(1):46-53 1982

By attaching two nylon strings threaded through catheters around the isolated hepatic artery, temporary dearterialization was achieved in 16 patients (9 men, 7 women, age range 39-72; 1 patient treated twice) with liver metastases from carcinoid tumors. This procedure was performed to separate the operative trauma from the time of occlusion, usually 3-4 days afterward. Three patients died within 14 mo, two from complications of concomitant bowel resection (1 and 3 mo postoperatively), and one from carcinoid disease (14 mo postoperatively). The 14 surviving patients experienced immediate relief of the carcinoid symptoms, ranging from 1-42 mo, with a mean of 3 mo. At 6 mo after operation the serotonin concentration in platelet-poor plasma was lower than preoperative values in 7/11 patients and unchanged in 4/11. At 12 mo, 4/7 had lower values or the same as at operation, and 3/7 had increased values. At 6 mo after operation, levels of 5-hydroxyindoleacetic acid (5-HIAA) were lower in 10/13 patients (7 of these were within the normal range). At 12 mo, 5-HIAA in 4/7 patients was lower than before operation, with 3/7 having normal levels. Regression and necrosis of liver metastases were seen angiographically after 8/15 operations in patients surviving more than 3 mo. Four angiograms showed no change, two showed progression, and two demonstrated no change followed by progression. This procedure is considered the method of choice for treatment of liver metastases from carcinoid tumors. (34 Refs)

40. CLINICAL AND PATHOLOGIC SUBTYPES OF PRIMARY INTESTINAL LYMPHOMA. EXPERIENCE WITH 132 PATIENTS OVER 14-YEAR PERIOD (MEETING ABSTRACT)

Al-Bahrani Z, Al-Mondhiry H
Pennsylvania State University, Hershey Medical Center, Hershey, PA, 17033
Proc Am Soc Clin Oncol; 1:C-617 1982

Primary lymphomas of the small intestine (PIL) seem to have a definite racial and geographic distribution. This paper describes clinical and laboratory data on 132 patients with PIL treated and followed up over 14-year period in Baghdad, Iraq. Based on the pattern of involvement and the histopathologic appearance of the tumor, the patients could be divided into three main groups. Ninety-seven patients had diffuse lymphoplasmacytic infiltration affecting large segments of the upper bowel, especially the jejunum. Abdominal pain, anorexia, weight loss, diarrhea, malabsorption, and clubbing of the fingers are the most common clinical findings. Barium appearance of the bowel and peroral jejunal biopsy are abnormal in most cases. This clinco-pathologic entity has been referred to in the literature as 'Mediterranean' lymphoma. Ten of 34 patients tested had free alpha-heavy chain in the serum. Treatment with a combination of tetracycline, cyclophosphamide and prednisone is usually helpful in early cases but of little use in late disease. Twenty-three patients had other, 'Western' variants of lymphoma (18 lymphocytic and 5 plasmacytic). The lesions were localized, occurring most frequently in the lower ilium or ileocecal area. The most common presentation was intestinal obstruction. Twelve children had Burkitt's lymphoma (BL), presenting most commonly with abdominal masses and/or intestinal obstruction. (no Refs)

41. STOMACH NON-HODGKIN'S LYMPHOMAS STAGES IE AND IIE: COMPARATIVE ANALYSES OF COMBINED MODALITY TREATMENT WITH SURGERY AND RADIOTHERAPY (MEETING ABSTRACT)

Maor MH, Osborne BM, Fuller LM, Maddux B, Velasquez WS, Hagemeister FB, Bennetts RW, Nelson RS, Shullenberger CC
M.D. Anderson Hospital, Houston, TX, 77030
Proc Am Soc Clin Oncol; 1:C-628 1982

Seventy-nine stage IE and IIE patients with non-Hodgkin's lymphomas of the stomach were admitted between 1953 and 1980. Thirty-six patients had surgery prior to referral. No patient had chemotherapy or radiotherapy. The histopathologic breakdown was diffuse large cell-38; immunoblastic-23; diffuse well differentiated-6; diffuse mixed-1; non-Burkitt-1; nodular-9; unclassifiable-1. There were 35 stage IE patients and 44 stage IIE. Treatment modalities included surgery, radiotherapy, chemotherapy and combinations thereof. Of 65 patients who had a laparotomy, resection was not possible in 22 (39%). The overall 5-year actuarial survival was 56%; the disease-free figure was 54%. There were 5 postoperative deaths among 29 patients who had a laparotomy and/or resection in our institution. For stage IE the survival was 76% and for stage IIE, 42%. The best results were obtained in 13 patients who were treated on a multi-modality program consisting of 4 cycles of CHOP-Bleo (cyclophosphamide, Adriamycin, Oncovin, prednisone, and bleomycin) which was alternated with involved field (IF) intensive radiotherapy (XRT). All 13 patients are surviving. Only one relapsed in Waldeyer's ring and this patient was salvaged with IF XRT. In 8 of these 13 patients, the stomach was not resected. Five were diagnosed by endoscopic biopsy, and 3 were unresectable at laparotomy. Resection was performed in the other 5 patients, 3 of whom were stage IE and 2 were stage IIE. In contrast, all 3 unresectable stage IIE patients treated with CHOP-Bleo alone are dead. (no Refs)

42. SURGICAL RESECTION IN THE TREATMENT OF ABDOMINAL UNDIFFERENTIATED LYMPHOMAS, INCLUDING BURKITT'S (MEETING ABSTRACT)

Janus C, Sariban E, Alabaster O, Magrath IT
National Cancer Institute, Bethesda, MD, 20205
Proc Am Soc Clin Oncol; 1:C-622 1982

Although surgery is considered to play a minor role in the specific management of lymphoma, a study in African Burkett's lymphoma (BL) suggested that resection of greater than 90% of intraabdominal tumor greatly improves the patient's prognosis. Our results in 14 patients with abdominal ULs (BL and non-BL) confirm this. The age range was 3-35 (median 14). Twelve were males. Twelve had ileocecal tumor. Other sites were ovarian, renal and retroperitoneal/thigh tumoirs. Eight patients presented with an acute abdomen, and 5 had intestinal obstruction. No patient had evidence of noncontiguous extraabdominal tumor. Treatment consisted of 5 cycles of CTX (cyclophosphanide) 1200 mgm/m2, ADR (adriamycin) 40 mgm/m2, VCR (vincristine) 1.4 mgm/m2, and Prednisolone 40 mgm/m2, for five days and a 42 hour MTX (methotrexate) infusion (total dose 2.7 Gm/m(2)) with leukovorin rescue on day 10. The first cycle consisted of CTX, alone, on day 1, and the MTX infusion on day 10. No patient received radiation. One patient with residual tumor achieved a partial response. One patient relapsed with a single nodule of disease in a BM examination but achieved CR (complete remission) again after intensive chemotherapy. All other patients have remained in CR. Thirteen are alive and disease free 9 to 46 months after presentation. We conclude that patients with abdominal UL which can be at least 90% resected have an excellent prognosis after 6 cycles of chemotherapy. (no Refs)

REHABILITATION ASPECTS

43. TASTE THRESHOLDS OF PATIENTS WITH CANCER OF THE ESOPHAGUS (MEETING ABSTRACT)

Lad T, Booth P, Kohrs MB, McGuire WP, Kamath S
University of Illinois, Chicago, IL, 60612
Proc Am Soc Clin Oncol; 1:C-231 1982

Twelve patients with untreated cancer of the esophagus and fourteen control subjects matched for age, smoking and alcohol consumption were tested for taste thresholds. Taste acuity for the 4 basic tastes was evaluated by 3 stimulus forced choice technique (Henkin). There were no significant differences between the groups for detection and recognition thresholds for sour, salty, sweet or bitter taste stimuli. Comparison of patients' detection and recognition thresholds with those of 8 young healthy non-smokers showed marked differences. Salivary urea nitrogen concentration was not different between patients and matched controls and did not correlate with bitter taste thresholds. Variable results have been reported for taste sensitivity in patients with malignant disease. In view of the results of this study and the many factors which influence taste acuity, it appears that a general statement regarding taste alterations in cancer patients cannot be made. Choice of appropriate control groups to correct for factors known to affect taste but not related to cancer per se is important for proper interpretation of taste testing results. (no Refs)

44. CHARACTERIZATION OF ANOREXIA IN PATIENTS WITH ADVANCED GASTROINTESTINAL CANCER (MEETING ABSTRACT)

Karlin D, Jacoby B, Jones RD, Abadilla L
M. D. Anderson Hospital and Tumor Institute, Houston, TX, 77030
Proc Am Soc Clin Oncol; 1:C-250 1982

Anorexia causing decreased caloric intake is the major cause of weight loss in patients with advanced cancer. The aim of this study is to characterize the causes of anorexia in patients with advanced gastrointestinal cancer (GICA). The following data were obtained from 76 patients with GICA: age (mean 58.7), sex, race, primary GICA site, extent of metastasis, Zubrod (ECOG) physical performance scale, weight loss, symptoms of anorexia, nausea, hypogeusia, dysgeusia, aversions to 12 dietary components, and best and worst meals of the day. There were increases in the incidence of anorexia and weight loss in the subgroups of patients with hypogeusia, dysgeusia, and nausea. There was an increase in the incidence of dysgeusia in the subgroup with hypogeusia. Of the patients with aversion to red meat and coffee there was an increase in the incidence of anorexia, hypogeusia, and dysgeusia. Aversion to chocolate was associated with anorexia, and aversions to fish/seafood and sweets were associated with dysgeusia. Red meat and poultry aversions were associated with weight loss. GICA primary site, extent of metastasis and prior chemotherapy were not predictive of anorexia, hypogeusia, dysgeusia, nausea or specific food aversions. Physical performance status was predictive of anorexia, hypogeusia, dysgeusia, nausea and aversion to red meat. Breakfast or lunch as best meals of the day or supper as worst were associated with an increased incidence of anorexia. (no Refs)

45. A MODIFIED TECHNIQUE FOR PERORAL PLACEMENT OF AN ESOPHAGEAL PROSTHESIS.

Minami H, McCallum RW
(c/o McCallum) Gastroenterology Section, Yale Univ. Sch. Medicine, 92 LMP, 333 Cedar St., New Haven, CT, 06510
Gastrointest Endosc; 28(2):95-97 1982

A Boyce esophageal prosthesis was placed using fiberoptic endoscopic control in 73-yr-old man with esophageal stricture caused by extrinsic compression from a recurrence of squamous cell carcinoma of the lung. The patient refused Eder-Puestow dilatation. Because the stricture could not be dilated to a diameter clearly exceeding that of the outside diameter of the prosthesis, placement of the prosthesis was difficult. Proper positioning was achieved, however, and a postplacement hypaque swallow showed good positioning of the Tygon tube with no evidence of perforation. Modifications of the procedure to facilitate placement of the prosthesis are discussed. (6 Refs)

46. ENDOESOPHAGEAL INTUBATION: A FAVORABLE PALLIATIVE MEASURE FOR MALIGNANT STENOSIS IN THE ESOPHAGEAL-CARDIAC REGION?.

Beck R, Kienzle HF, Staemmler-Kienzle S, Fux HD
Chirurgische Klinik, Stadtisches Klinikum Karlsruhe, Moltkestrasse 14, D-7500 Karlsruhe, W. Germany
Langenbecks Arch Chir; 356(3):167-173 1982

Of 337 patients with carcinoma of the esophageal or cardiac regions, 131 (94 men and 37 women, 33-82 yr old, av age 65.5 yr) received palliative treatment by intubation with an endoprosthesis. The primary symptom was dysphagia. Other symptoms included vomiting, loss of appetite, retrosternal pressure and pain, and aversion to meat and sausage. Gastrotomy was performed, and a gastric sonde with the prosthesis affixed to the end was passed through the stenosis from the oral direction. Total lethality 2-70 days after surgery was 34.4%. Causes of death included tumor cachexia, hepatic coma, delirium tremens, and subarachnoidic hemorrhage. Lethality specific for the method was 22.9%. Eighty-six patients were released from the hospital after surgery. Av hospital time for these patients was 22 days; survival time was 27-545 days (av 145.6 days). Postoperative complications included those found generally among older, cachectic patients. Complications specific for the procedure included dislocation of the prosthesis (4.6%), esophageal perforation (3.8%), tumor hemorrhage (4.6%), occlusion of the prosthesis by tumor (8.4%), and occlusion of the prosthesis by pieces of food (5.3%). Of 39 patients responding to questionnaires, 29 reported subjective improvement as a result of the procedure. In spite of high operative lethality, use of the endoprosthesis is recommended as a satisfactory palliative measure for malignant stenosis in the esophageal or cardiac region. (13 Refs) (In GER)

47. INTUBATION OF INOPERABLE TUMOURS OF THE OESOPHAGOGASTRIC JUNCTION.

Moll FL, Sybrandy R
Dept. General Surgery, St. Antonius Hosp., Utrecht, The Netherlands
Neth J Surg; 34(1):8-11 1982

Various aspects of intubation methods are examined on the basis of 42 cases with inoperable tumors of the esophagus-cardia region. The tumor sites were stomach (cardia, 30 patients), esophagus (6 patients), and lung (6 patients). The intubation procedures for the patients (average age 66 yr) were Celestin tube (21 patients), Mousseau-Barbin tube (19 patients), Haring tube (1 patient), and polyvinyl (tygon) tube (1 patient). The average post-operative survival was 11 wk (0-80 wk). Twelve patients died in the hospital, on average 10 days after surgery (1-42 days), yielding an operative mortality rate of 28%. Thirty patients were released from the hospital, at which time none exhibited any symptoms of obstruction. A total of 17 complications were found in 14 patients. The major complication postoperatively was wound infection followed by respiratory infection, tube dislodgement, and tube obstruction by food. Due to the high rate of infection encountered, it is worthwhile to perform surgery and endoscopy under antibacterial prophylaxis aimed of oral and esophageal microflora. Intubation continues to be an effective palliative treatment for gastroesophageal obstruction in patients with inoperable esophagogastric junction tumors. (15 Refs)

48. FIBREOPTIC INTUBATION OF MALIGNANT OESOPHAGO-GASTRIC STRICTURES BY THE ATKINSON METHOD.

van Blankenstein M, Tan TG, Dees J
Dept. Internal Medicine II, Univ. Hosp. Dijkzigt, Rotterdam, The Netherlands
Neth J Surg; 34(1):11-12 1982

Results of 125 intubations performed in 119 patients (58 with esophageal carcinoma, 33 with gastric cardia carcinoma, and 28 with tumors in the mediastinum) are presented. Intubation failed in 9 patients and the procedure related mortality was 16 (12.8%). In 102 of the 110 successfully intubated patients, 84 were satisfied with the prosthesis. Due to the increased perforation rate and concomitant mortality in tight malignant strictures, early intubation in inoperable malignant strictures is strongly advocated. (6 Refs)

49. TUMORS OF THE HEPATIC HILUS. PALLIATIVE TREATMENT BY TRANS-HEPATOBILIARY T-TUBE DRAINAGE.

Benichou J
Service de Chirurgie A, Centre Hospitalier de Bicetre, F 94270 Le Kremlin Bicetre, France
Nouv Presse Med; 11(11):863-864 1982

Non-resectable tumors of the hepatic hilus require palliative treatment, and this can be achieved by means of a trans-hepatobiliary T-shaped tube devised by the authors. The longer branch of the tube going through the bile ducts and liver can as easily be removed when obstructed as a U-shaped tube. The shorter branch going through the common bile duct ensures internal biliary drainage. The drain can easily be changed under fluoroscopy. (Author abstract) (no Refs) (In FRE)

50. USE OF CROSSED-LIMB LOOP ANCHOR FOR PERCUTANEOUS BILIARY BYPASS.

Cope C
Dept. Radiology, Temple Univ. Sch. Medicine, Philadelphia, PA, 19141
AJR; 138(5):974-976 1982

Use of the crossed limb loop anchor (CLLA) drain for percutaneous biliary bypass in long term outpatient management is described. The technique has been used successfully in greater than 40 patients with malignant obstruction, each requiring 2-8 catheter interval exchanges. Best results were obtained with the 12 French catheter. Catheter patency problems occurred occasionally at 3-4-wk intervals if a triweekly irrigation schedule was not followed, the bile was unusually viscid or the patient was a stone former, or the loop had kinked in the duodenum. Construction of the CLLA drain and method of use for percutaneous biliary bypass are described. (5 Refs)

51. ENDOSCOPIC DECOMPRESSION AND DRAINAGE OF BENIGN AND MALIGNANT BILIARY OBSTRUCTION.

Siegel JH, Harding GT, Chateau F
230 East 69th St., New York, NY, 10021
Gastrointest Endosc; 28(2):79-82 1982

Successful performance of endoscopic sphincterotomy in the treatment of choledocholithiasis led to the placement of retrograde, transpapillary catheters for internal drainage and prevention of cholangitis. This technique presented the opportunity for using nasobiliary tubes for short term treatment of this problem or placing a permanent drain into the bile duct for long term management. Internal drains placed endoscopically have been used on 15 occasions: 10 nasobiliary and 5 permanent. These drains have functioned well without complications prompting us to recommend this approach in patients with benign or malignant obstruction of the biliary tree. (Author abstract) (8 Refs)

52. INTERVENTIONAL RADIOLOGY OF THE BILIARY TRACT.

Ferrucci JT, Mueller PR
Dept. Radiology, Massachusetts General Hosp., Boston, MA, 02114
Gastroenterology; 82(5,part1):974-985 1982

The current status of percutaneous biliary drainage (PBD), secondary therapeutic maneuvers (endoprothesis, stricture dilatation, biopsy technics, stone dissolution or extraction), and trans-T-tube manipulations is reviewed. Indications for PBD include palliation of advanced malignant obstruction, preoperative decompression, and treatment of sepsis (cholangitis, liver abscess) and failed biliary-enteric anastomosis. The most common indication for PBD is palliative decompression for advanced or unresectable malignant obstruction. The presence of intrahepatic metastases does not contraindicate a percutaneous drainage procedure, since intra- and extrahepatic obstruction may coexist and considerable improvement of the patient's clinical status may occur after catheter drainage. Methodology, adverse effects (including catheter occlusion due to plugging by tumor growth), and results of PBD are described. Although the initial disease process remains the principal determinant of long term prognosis, PBD has been shown to improve the quality of life of some cancer patients. When used in combination, bile cytology, percutaneous fine needle aspiration, and transcatheter brush or forceps biopsy allow complete nonsurgical, radiologic management of patients with malignant biliary obstruction. (44 Refs)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

53. LIVER ADENOMA WITH GRANULOMAS. THE APPEARANCE OF GRANULOMAS IN ORAL CONTRACEPTIVE-RELATED HEPATOCELLULAR ADENOMA AND IN THE SURROUNDING NONTUMOROUS LIVER.

Malatjalian DA, Graham CH
Dept. Pathology, Victoria General Hosp., 5788 Univ. Ave., Halifax, Nova Scotia, B3H 1V8, Canada
Arch Pathol Lab Med; 106(5):244-246 1982

A 31-yr-old woman who had taken oral contraceptives regularly for 7 yr was found to have a hepatocellular adenoma in the left lobe of her liver. An unusual microscopic feature of the resected specimen was the presence of numerous noncaseating, epithelioid granulomas in both the adenoma and the surrounding nontumorous liver. The literature contains brief mentions of granulomas occurring within an occasional hepatocellular adenoma, but a search uncovered no reports of granulomas occurring in both the tumor and the surrounding nontumorous liver. This further evidence of the occurrence of epithelioid granulomas with hepatocellular adenomas suggests a possible relationship between tumor antigens and the granulomatous response. (Author abstract) (23 Refs)

54. THOROTRAST-INDUCED HEPATIC ANGIOSARCOMA, AND COMBINED HEPATOCELLULAR AND CHOLANGIOCARCINOMA IN A SINGLE PATIENT.

Kojiro M, Kawano Y, Kawasaki H, Nakashima T, Ikezaki H
First Dept. Pathology, Kurume Univ. Sch. Medicine, Kurume, 830, Japan
Cancer; 49(10):2161-2164 1982

A 64-yr-old man developed hepatic angiosarcoma, and combined hepatocellular and cholangiocarcinoma, 36 yr after Thorotrast administration. The patient presented with a large mass in the right upper quadrant. His serum alpha-fetoprotein increased from 800 ng/ml to 51.2 ug/ml, and liver biopsy disclosed hepatocellular carcinoma. At autopsy, the liver had two different malignant neoplasms; angiosarcoma and combined hepatocellular and cholangiocarcinoma. Metastases of angiosarcoma to both lungs and of cholangiocarcinoma to periaortic lymph nodes were also seen. Interestingly, some neoplastic cells of angiosarcoma exhibited globular hyaline inclusions, which were Periodic-Acid-Schiff reaction positive and diastase-resistant. (Author abstract) (13 Refs)

55. ADENOCARCINOMA AT THE SITE OF A HEALED GASTRIC ULCER AFTER 10 YEARS OF ENDOSCOPIC OBSERVATIONS.

Novis BH, Burns DG, Phil D
(c/o Burns) Gastrointestinal Clinic, Groote Schuur Hosp., Observatory 7925, Cape Town, South Africa
Am J Gastroenterol; 77(2):99-100 1982

An adenocarcinoma developed in a 52-yr-old man during the course of a 10-yr gastroscopic and biopsy follow-up of a benign gastric ulcer that had remained healed for over 7 yr after a recurrence of the initially healed lesion. Histologically the lesion was an early gastric carcinoma of the intestinal type, with the rest of the mucosa showing an element of intestinal metaplasia and chronic gastritis. Development of a carcinoma in the healed scar of a benign gastric ulcer is rare; however, patients with healed gastric ulcers should be followed up endoscopically. (Author abstract) (7 Refs)

56. CARRIER STATUS IN HEPATITIS B: A MODERN SCOURGE WITH HOPE.

Iber FL
Univ. Maryland Hosp., Batimore, MD
JAMA; 247(16):2275-2276 1982

The importance of 'carriers' of hepatitis B is discussed. The prevalence of hepatitis B surface antigen (HBsAg) carriers in the general population of the United States is estimated to be 0.2-0.5%. The majority of these patients are entirely asymptomatic, yet the carrier at times represents a clear health hazard to his contacts. The HBsAg carrier is at clear risk of liver disease and hepatocellular carcinoma (HCC). Approx 15-20% of asymptomatic carriers have significant chronic liver disease. At least one half of all patients in whom HCC develops have associated markers of hepatitis B virus. (2 Refs)

57. GENETICS OF A FAMILIAL CANCER SYNDROME CHARACTERIZED BY SARCOMAS AND DIVERSE NEOPLASMS (MEETING ABSTRACT)

Blattner WA, Zener KA, Greene MH, Mulvihill JJ, Li FP, Fraumeni JF
National Cancer Institute, Bethesda, MD, 20205
Proc Am Soc Clin Oncol; 1:C-711 1982

In 1969, Li and Fraumeni described a familial syndrome of sarcomas (S), breast (B), and other neoplasms affecting children and young adults. The current survey of 26 families with S and one other cancer (Ca) (excluding non-melanotic skin) in first-degree relatives was undertaken to characterize the syndrome. Among 1,242 family members, 283 primary Ca's were ascertained. In 27 cases multiple primary Ca's were documented including 1 with 4 separate primaries and 3 with triple primary Ca's. Excluding the 26 S in index cases, the distribution of Ca types was: B 21%, S 12.8%, lung (Lu) 9.3%, brain (Br) 8.1%, leukemia (L) 6.6%, gastric 4.2% and pancreas 3.9%. Adrenal cortical cancers were reported in 3 children. The age distribution for certain neoplasms (S, L, Br) resembled the expected pattern, while others (B, Lu) tended to occur at a younger age than usual. Review of pedigrees revealed 2 patterns: in 12 families, Ca's clustered in distant branches traced through a single line of descent; in 10, Ca's clustered in a single sibship with multiple ancestral branches contributing to the familial tumor diathesis. Demographic characteristics and tumor types were indistinguishable in the 2 groups. These data support the concept that susceptibility mechanisms are shared by several forms of Ca including bony and soft-tissue sarcomas; brain, breast, and lung tumors; and leukemia. (1 Ref)

58. A FAMILIAL AGGREGATION OF PANCREATIC CANCER: AN IN VITRO STUDY.

Danes BS, Lynch HT
Lab. Cell Biology (D-209), Dept. Medicine, Cornell Medical Coll., 1300 York Ave., New York, NY, 10021
JAMA; 247(20):2798-2802 1982

The incidence of pancreatic cancer has been increasing steadily in the United States and other industrialized nations. Its obscure etiology and difficult early diagnosis tend to hobble effective control programs. Innovative methods, such as biomarkers, might provide clues to its inevitable occurrence in high-risk individuals. We studied a family in which four individuals manifested pancreatic cancer verified through two generations. Cell cultures from split-thickness skin biopsy specimens were obtained from 24 members from three generations (17 bloodline relatives, 7 family members by marriage) as well as 10 nonfamily normal subjects, none with a family history of solid tumors. One of the constant features of human monolayer dermal cultures has been diploidy. Hyperdiploidy, other than tetraploidy, has been rarely observed in cultures from normal subjects without a family history of solid tumors. We observed increased in vitro hyperdiploidy in 8 of 17 family members studied. (Author abstract) (33 Refs)

59. CANCER-ENVIRONMENT REGISTRY DATA INSUFFICIENT FOR ANALYSIS OF POSSIBLE RELATIONSHIP BETWEEN PARENT'S OCCUPATION AND TUMORS IN THEIR CHILDREN.

Berglund K, Iselius L, Lambert B, Lindsten J, Ludvigsson J, Stjernfeldt M
Statens mijlomedicinska laboratorium, Stockholm, Sweden
Lakartidningen; 79(15):1484-1487 1982

Data in the cancer-environment registry were analyzed to identify the cancer frequency in different occupational groups. It was not possible to analyze the frequency of malignant diseases among children as a function of their parent's occupation due to lack of appropriate data in the cancer registry. The standardized morbidity rates (SMR) in men were found to be increased after mass significance analysis for cancer of the lips, tongue, salivary glands, floor of mouth and larynx in workers (rubber industry); for cancer of the esophagus and gastrointestinal tract in engineers and technicians exposed to chemicals; for cancer of the biliary tract, liver and pancreas in bookkeepers, cashiers, motor vehicle operators, barbers and beauticians; for cancer of the nose, paranasal sinuses, middle ear, trachea, bronchi, lungs and pleura in chemists, pharmacists, bookkeepers, cashiers, gasoline station attendants, motor vehicle operators, painters, printers, workers (rubber industry), barbers and beauticians; for cancer of the kidneys and urinary tract in engineers and technicians exposed to chemicals, bookkeepers, cashiers, typists, workers (rubber and leather industries), barbers and beauticians; for cancer of skin (including melanoma) in bookkeepers, cashiers, bank employees and workers (leather industry). In women the SMR were increased for cancer of the esophagus and gastrointestinal tract among bookkeepers, cashiers and bank employees; for cancer of the kidneys and urinary tract among secretaries, stenographers, typists and pharmacists, and for cancer of the skin (including melanoma) among secretaries, stenographers and typists. (15 Refs) (In SWE)

60. GASTRIC CANCER IN FUSHIMI AREA.

Kogawa K, Ikuta T, Tujimoto G, Yagi S, Ogawa K, Shimizu I, Maekawa T, Kajitani Y, Hikita Y, Nishida H, Yasutomi T
Div. Gastroenterology, Kyoto Natl. Hosp., Kyoto, Japan
Naika Hokan; 29(2):87-92 1982

To find a possibility for gastric cancer (GS) mass screening in hospitals replacing the mobile screening, a survey was carried out in the Fushimi-Ku area. With mass screening, 22 cases of GS (10 cases of early GS) were found in 10,648 people with a detection rate of 0.2%. In this area, the number of people who died of GS (av 90/yr) was lower than in Kyoto city (723/yr). The crude death rate was in general lower than that of Kyoto City. No decrease in annual death rate was apparent. The population of more than 50 yr-old decreased from 19.1% to 17.8% in a decade. This suggests that the lower crude death rate was probably due to the increase in young people. The crude death rate among people of more than 50-yr-old was found to be higher than that of Kyoto city. The survey showed that 46 hospitals performed x-ray mass screening for GS in 14,000 people in 1980, (a simple rate of 6% of the population). (no Refs) (In JPN)

61. INTESTINAL METAPLASIA IN JAPAN: ASSOCIATION WITH DIET.

Nomura A, Yamakawa H, Ishidate T, Kamiyama S, Masuda H, Stemmermann GN, Heilbrun LK, Hankin JH
Japan-Hawaii Cancer Study, Kuakini Medical Center, 347 North Kuakini St., Honolulu, Hawaii, 96817
JNCI; 68(3):401-405 1982

Of 1,749 volunteers in a screening program for gastric cancer in Japan, 206 men and 181 women received a systematic gastroscopic examination and responded to a dietary questionnaire estimating their quantitative intake of 33 food items during the past week. When diet was correlated with intestinal metaplasia (a precursor lesion of gastric carcinoma) found in gastroscopic biopsies, it was observed that more dried fish consumption and less vitamin A intake increased the extent of intestinal metaplasia in men. For women, there was a significant negative association of ume (pickled plum) intake with intestinal metaplasia. The implications of these findings were discussed in relation to gastric cancer. (Author abstract) (42 Refs)

62. MEAT AND FAT CONSUMPTION AND CANCER MORTALITY: A STUDY OF STRICT RELIGIOUS ORDERS IN BRITAIN.

Kinlen LJ
Cancer Res. Campaign, Cancer Epidemiology Res. Group, Univ. Oxford, Radcliffe Infirmary, Oxford, England
Lancet; 1(8278):946-949 1982

The close correlations between mortality from breast and colorectal cancers and the per-caput consumption of meat or fat in different countries suggest that .these dietary items may be involved in the etiology of these neoplasms. To investigate further these possible relations a study has been conducted of cancer mortality between 1911 and 1978 in two groups of enclosed religious orders for women: one of 1,769 nuns who eat no meat and one of 1,044 nuns who eat little meat. Mortality from breast and colorectal cancer was not significantly lower in either group than in the general population. It is difficult to evaluate the small reduction in breast cancer mortality in the no-meat group because of the wide confidence limits. An unexpected finding was an excess mortality from esophageal cancer in both groups. These findings concern women who reduced their meat consumption in adult life: it is suggested that they are compatible with the evidence put forward to support a role for fat or meat intake in causation of breast cancer if dietary influences in pre-adult life are important. The findings on colorectal cancer point to the etiological importance in this disease of aspects of diet other than fat or meat intake. (Author abstract) (34 Refs)

63. PRECURSOR LESIONS OF OESOPHAGEAL CANCER IN HIGH-RISK POPULATIONS IN IRAN AND CHINA.

Munoz N, Crespi M, Grassi A, Qing WG, Qiong S, Cai LZ
Analytical Epidemiology Program, Div. Epidemiology and Biostatistics, International Agency for Res. on Cancer, 150 Cours Albert-Thomas 69372, Lyon Cedex 2, France
Lancet; 1(8277):876-879 1982

To determine the prevalence of precursor lesions of esophageal cancer in Linxian, People's Republic of China, which has an extremely high incidence of esophageal cancer, 527 subjects were interviewed by a questionnaire about exposure to suspected risk factors. They also underwent esophagoscopy, cytology, and biopsy. 84% had a chronic esophagitis which had similar endoscopic and histological characteristics to that reported in Iran. The esophagitis was accompanied by atrophy of the epithelium in 10% of these subjects and by dysplasia in 8%. Reexamination of 20 selected subjects 1 year later showed progression of the esophagitis to atrophy and dysplasia in 4 individuals and to cancer in 4 others. The surveys in Iran and China suggest that the natural history of esophageal cancer starts with an esophagitis which, in a few individuals, progresses to atrophy and dysplasia of the epithelium and finally to cancer. Thermal injury resulting from the drinking of very hot beverages, physical injury caused by ingesting very coarse food, and deficiencies of riboflavin, vitamin A, and zinc are proposed as risk factors for these precursor lesions. (Author abstract) (17 Refs)

SELECTED PRE-CLINICAL STUDIES

64. ZINC DEFICIENCY, ALCOHOL, AND A RETINOID: ASSOCIATION WITH ESOPHAGEAL CANCER IN RATS.

Gabrial GN, Schrager TF, Newberne PM
(c/o Newberne) Animal Pathology Lab., Dept. Nutrition and Food Science, Massachusetts Inst. Technology, Cambridge, MA, 02139
JNCI; 68(5):785-789 1982

Groups of Charles River Sprague-Dawley male rats were given intragastric intubations of methylbenzylnitrosamine after receiving one of the following diets for 4 weeks: control, zinc-deficient, or zinc-deficient diet plus 4% ethanol in the drinking water. One zinc-deficient group was zinc repleted after the dosing period; the other group, zinc-deficient plus 4% ethanol, received 13-cis-retinoic acid (13-cis-RA) after the dosing period. Zinc deficiency significantly enhanced esophageal tumor incidence; the addition of ethanol further enhanced tumor incidence. Zinc repletion reduced tumor incidence, whereas the addition of 13-cis-RA enhanced tumor incidence. (Author abstract) (30 Refs)

65. INDUCTION AND CHARACTERIZATION OF GASTRO-DUODENAL LESIONS IN MICE GIVEN CONTINUOUS ORAL ADMINISTRATION OF HYDROGEN PEROXIDE.

Ito A, Naito M, Naito Y, Watanabe H
Dept. Cancer Res., Res. Inst. Nuclear Medicine and Biology, Hiroshima Univ., Kasumi 1-2-3, Minami-ku, Hiroshima 734, Japan
Gan; 73(2):315-322 1982

The tumorigenicity of hydrogen peroxide (HP) was examined by administering 0.4% HP solution in drinking water to various strains of mice. In C57BL mice, gastric lesions in the forestomach occurred in over 67% of the mice treated with HP for 120 days and duodenal lesions were noted in over 80% of the mice that received HP for 60 days. Gastric lesions were found only in the glandular stomach and duodenal lesions were restricted to the peri-pyloric and proximal part of the duodenum. The lesions in both organs were often multiple. The gastric lesions were composed of erosion and hyperplasia and those in the duodenum were exclusively hyperplasia. In mice given 0.4% and 0.1% HP for 420 to 740 days, 5 and 1% of them, respectively, had duodenal cancer by histological criteria though they did not show any distant metastasis. In the control group, no cancer was noted in the same observation period. The incidence and av numbers of lesions in both the stomach and duodenum after 150 to 210 days of HP intake decreased or fell to zero if HP administration was interrupted for 10 to 30 days. In DBA and BALB mice given 0.4% HP for 90 to 210 days, the incidences of gastric lesions reached 30 and 10% at max, respectively, and the incidences of duodenal lesions were 60 to 100% and 40 to 69%, respectively. (Author abstract) (17 Refs)

66. SOLID TUMORS OF HUMAN PRIMARY HEPATOCELLULAR CARCINOMA CELL-LINES IN HYPOTHYMIC MICE: A MODEL FOR BIOCHEMICAL AND THERAPEUTIC STUDIES.

Hahn EG, Gauss-Muller V, Hornberger M, Kalbfleich H, Deinhardt F
Medizinische Klinik and Poliklinik, Universitatsklinikum Steglitz, Hindenburgdamm 30, D-1000 Berlin 45, W. Germany
Z Gastroenterol; 20(3):168-173 1982

The behavior of human primary hepatocellular carcinoma (HPHC) cell lines was studied in nude mice. Hypothymic mice of strains Balb/c nu/nu and C57Bl nu/nu were injected sc with 1-8 x 10(7) cells from HPHC lines PLC/PRF/5, Hep3B, or Mahlavu. The first two strains produce hepatitis B surface antigen (HBsAg); Mahlavu cells do not. All three cell lines produced solid tumors that were successfully transplanted sc into additional mice. Significant differences in growth were not noted between cell line. Tumor growth was detectable within 14 days. Retransplantation allowed production of large homogeneous experimental groups and larger tumor masses. No evidence of metastasis was found in lung, liver, or spleen tissue of host animals. Tumors were separated from host tissue by capsules of connective tissue. HBsAg, alpha-fetoprotein (AFP), fibrinogen, and alpha-antitrypsin (AAT) were detected by immunofluorescence techniques in cells of PLC/PRF/5 and Hep3B tumor transplants. No positive reactions for hepatitis A or Bc virus antigens were noted. No HBsAg, AFP, fibrinogen, AAT, or hepatitis virus antigens was detected in Mahlavu tumor transplants. Growth of cells exhibiting many of the properties of the original tumors without immunosuppressive treatment of the host animals makes the nude mouse-HPHC model suitable for study of human hepatocellular carcinoma. (6 Refs) (In GER)

67. ISOLATION, CULTURE, AND TRANSPLANTATION OF HUMAN HEPATOCYTES.

Strom SC, Jirtle RL, Jones RS, Novicki DL, Rosenberg MR, Novotny A, Irons G, McLain JR, Michalopoulos G
(c/o Michalopoulos) Dept. Pathology, Duke Univ. Medical Center, Box 3432, Durham, NC, 27710
JNCI; 68(5):771-778 1982

The in situ two-step collagenase perfusion technique used for the isolation of hepatocytes from rat liver was adapted into a procedure applicable to pieces of human liver obtainable from surgical procedures. Human hepatocytes obtained by this method were maintained in primary culture for 10 days. The cellular changes observed at the light microscopic and electron microscopic levels are described. The changes in microsomal enzymes as a function of the age of the cultures were also measured. Exposure of the human hepatocytes to procarcinogens known to be metabolized by rodent liver resulted in unscheduled DNA synthesis. The isolated hepatocytes were also transplanted into two-thirds partially hepatectomized athymic nude mice. The transplanted cells formed nodules with characteristic hepatic architecture. These studies demonstrate that hepatocytes obtained from human liver by the described modified collagenase technique can be used for in vitro studies in chemical carcinogenesis. (Author abstract) (27 Refs)

68. REGIONAL CHEMOTHERAPY TO THE CANINE LIVER WITH 5-FLUOROURACIL (5FU) AND ADRIAMYCIN (AM) (MEETING ABSTRACT)

Karakousis CP, Sharma SD, Kanter P
Roswell Park Memorial Institute, Buffalo, NY, 14263
Proc Am Assoc Cancer Res; 23:832 1982

Four dogs were used for each category (total of 56). They were sacrificed 1 hour after treatment and 8 liver specimens taken to calculate the mean drug tissue level, expressed in mcg/gm tissue. FU was labeled with C14, while a fluorometric assay was used for Am. 5FU 15mg/kg as bolus injection (BI) in a peripheral vein (IV) resulted in hepatic level 0.88, via the hepatic artery (HA) in 1.19, via the portal vein (PV) in 0.77; as a slow infusion (SI) over 1 hour, given IV in 1.22, via HA in 1.65, via PV in 1.01; as SI over 3 hours, given IV in 1.09, via HA in 1.18, via PV in 0.80. Am 1mg/kg as BI, given IV resulted in hepatic level 36.8, via HA in 78.9, via PV in 65.5; Am as SI over 1 hour resulted in hepatic level, via HA in 62.1, via PV in 37.7. 5FU infused through HA produces higher hepatic levels than IV administration. The advantage of regional chemotherapy for 5FU is shown with rates of infusion less than 3 hours. Am infused via HA produces higher hepatic levels than IV infusion with evidence that BI produces higher levels than SI. Rate of drug infusion in regional and systemic chemotherapy is an important parameter which requires further investigation. (1 Ref)

69. ERADICATION OF MICROSCOPIC DEPOSITS OF LINE-10 HEPATOCARCINOMA IN THE LIVER BY ACTIVE SPECIFIC IMMUNIZATION (MEETING ABSTRACT)

Hunter JT, Sukumar S, Terata N
Laboratory of Immunobiology, National Cancer Institute, Bethesda, MD, 20205
Proc Am Assoc Cancer Res; 23:1015 1982

Guinea pigs with stage-II malignant disease were successfully treated by post-operative immunization with irradiated tumor cell vaccine. We tested the efficacy of this vaccine in eradicating line-10 cells in the organ of origin (the liver) to determine whether liver metastases were susceptible to active immunotherapy. Intraportal vein injection of line-10 cells in the strain-2 guinea pig resulted in growth of tumor foci in the liver, development of metastases in the hepatic lymph nodes and death with ascites. Growth of line-10 tumor foci could be prevented by immunization with an irradiated tumor cell vaccine containing cell wall of Mycobacterium bovis strain Bacillus Calmette-Guerin (BCG-CW) in an oil in water emulsion. Successful treatment required both line-10 tumor cells and BCG-CW emulsion; vaccines lacking either component were not effective. Immunization with irradiated line-one cells (a hepatoma antigenically distinct from line-10) did not prevent the outgrowth of line-10 cells. Active immunization was effective 1, 7 and 14 days after injection of line-10 cells. Animals rendered free of disease by vaccination rejected a challenge of line-10 cells, but not of line-one cells. This study has shown that active specific immunotherapy is an effective method for eradicating microscopic foci in the liver of a transplantable hepatocellular carcinoma. (1 Ref)

70. COMBINED IMMUNO-CHEMOTHERAPY OF DISSEMINATED SYNGENEIC LINE 10 HEPATOCARCINOMA IN GUINEA PIGS (MEETING ABSTRACT)

Key ME, Brandhorst JS, Hanna MG
National Cancer Institute, Frederick Cancer Research Facility, Frederick, MD, 21701
Proc Am Assoc Cancer Res; 23:1013 1982

These studies were designed to assess the compatibility of chemotherapy and immunotherapy as an integrated approach to the treatment of disseminated micrometastatic cancer. Inbred strain 2 guinea pigs that had received 10(6) syngeneic line 10 (L10) hepatocarcinoma cells iv (100 times the minimal lethal dose) died from pulmonary metastases within 90 days, with a median survival time of 57 days. Guinea pigs treated with a subtoxic dose of 150 mg/kg cyclophosphamide (CY) on day 1 after tumor challenge survived for a median of 80 days, although no permanent cures were attained. When tumor-bearing animals were treated with a vaccine consisting of viable BCG admixed with x-irradiated viable L10 cells on days 10 and 17 and x-irradiated viable L10 cells alone on day 24, 20-40% of the animals survived. However, when CY was administered 1 week after immunotherapy, the percentage of long-term survivors was twice that achieved with immunotherapy alone. Administration of CY before immunotherapy did not augment survival; however, this was not because a state of immunosuppression had been induced, as is evident from the finding that these animals displayed a normal immune reaction to L10. Histologic analysis of tumor sites in immunized animals revealed a cell-mediated hypersensitivity response that disrupted the normal anatomic architecture of the tumor. This immune alteration of the anatomic barriers of the metastatic nodules could render them more vulnerable to systemically administered cytotoxic drugs. (no Refs)

71. IN VITRO DRUG SENSITIVITY OF A HUMAN PANCREATIC CELL LINE (MEETING ABSTRACT)

Lehman C, Benz C, Cadman E
Yale School of Medicine, New Haven, CT, 06510
Proc Am Soc Clin Oncol; 1:C-50 1982

Because of the poor response rates of pancreatic cancer to chemotherapy, we chose to investigate the effects of a variety of drugs on the clonal growth of the human pancreatic adenocarcinoma, Colo-357. Cytotoxicity was determined following 2, 6, or 24 hr exposure to the following drugs: 5-fluorouracil (FUra), methotrexate (MTX), adriamycin (Adria), mitomycin C (Mito), Carmustine (BCNU), Streptozotocin and cisplatinum. The most toxic agents against Colo-357 were MTX, Adria, and Mito; both Adria and Mito were nearly as effective for 6 and 24 hr exposures at concentrations which are clinically achievable. FUra was much less toxic, producing 50% growth inhibition (ID50) by a 24 hr exposure to 10uM, a CxT product which is not clinically achievable. Colo-357 drug sensitivity was compared to a human colon carcinoma cell line (HCT-8) and a breast carcinoma line (47-DN). ID50 values for the tested drugs are similar for Colo-357 and HCT-8 but not 47-DN, especially with respect to FUra and MTX. The clinical response rates for FUra average 30% in breast cancer, 25% in pancreatic, and 10-20% in colon carcinomas; thus in vitro comparison appears to be relevant. MTX, which has received little clinical attention for treating colon or pancreatic cancer, shows 1-2 log greater toxicity against these cell lines than against the breast tumor line, which represents a carcinoma clinically responsive to MTX. These studies suggest that MTX, or sequentially combined MTX-FUra which has been shown to be synergistic in vitro, should be considered for clinical trials in pancreatic cancer. (no Refs)

72. ACTIVITY OF HUMAN LEUKOCYTE INTERFERON IN A HUMAN TUMOR CLONING SYSTEM.

Von Hoff DD, Gutterman J, Portnoy B, Coltman CA
Dept. Medicine, Div. Oncology, Univ. Texas Health Science Center at San Antonio, San Antonio, TX, 78284
Cancer Chemother Pharmacol; 8(1):99-103 1982

The human tumor cloning system of Hamburger and Salmon was used to investigate the antitumor effect of human leukocyte interferon (IF) in material from 29 bone marrow aspirations, 53 tumor biopsies, 14 paracenteses, and 10 thoracenteses in 106 patients with advanced malignancies. Colonies in culture were formed in 62/106 attempts. IF caused a greater than or equal to 70% decrease in tumor colony forming units (TCFU; at a concentration of 1,000 U/ml) in only five cultures, one each of lymphosarcoma cell leukemia, small cell lung cancer, adenocarcinoma of the lung, breast cancer, and pancreatic cancer. IF caused an increase in the number of colonies over control growth in three cultures: one adenocarcinoma of the lung (82% increase), and two ovarian cancers (39% and 141% increase). Of the 62 dose-response studies conducted, IF had minimal or no effect on 15 different tumors in vitro, even at concentrations as high as 1,000 U/ml; only three patients (lymphosarcoma cell leukemia, small cell lung cancer, and pancreatic carcinoma) had greater than or equal to 70% decrease in TCFUs at the highest concentration of IF used (1,000 U/ml). The antitumor effect of IF was studied in one patient with lymphosarcoma cell leukemia with an 85% decrease in the number of colonies formed in vitro. Clinically, IF resulted in a decrease in the size of the lymph nodes, but circulating leukemic blast cells continued to be present. The cloning system may be useful for identifying patients who might experience an antitumor effect from IF. (26 Refs)

73. PANCREATIC CARCINOMA INDUCED BY N-METHYL-N'-NITROSOUREA IN AGED MICE.

Zimmerman JA, Trombetta LD, Carter TH, Weisbroth SH
Dept. Biological Sciences, St. John's Univ., Jamaica, NY, 11439
Gerontology; 28(2):114-120 1982

We have studied the ability of N-methyl-N'-nitrosourea to induce pancreatic carcinoma within 5 mo when single doses were administered to C57BL/6J male mice at 3, 12 and 24 mo of age. Pancreatic tumors were not observed in the young and middle-aged animals, but 3/15 of the surviving aged mice showed gross evidence of carcinoma. Ultrastructural analysis revealed in each tumor the presence of two populations of undifferentiated cells, both cell types possibly being of acinar cell origin. The observation of pancreatic carcinoma only in aged animals treated with an environmental carcinogen may be a model paralleling the human condition, which also shows a strong age dependency. (Author abstract) (25 Refs)

AUTHOR INDEX WITH CITATION NUMBERS

Abadilla L 44
Al-Bahrani Z 40
Al-Mondhiry H 40
Alabaster O 42
Avellone JG 24
Axel L 2
Axon AT 12
Barin F 22
Barnes PA 1
Barth KH 35
Bartles DM 30
Beck R 46
Becker H 19
Bendon R 16
Bengmark S 37
Bengmark S 39
Benichou J 49
Bennett SJ 11
Bennetts RW 41
Benz C 71
Berglund K 59
Bernardino ME 1
Blattner WA 57
Booth P 43
Borchard F 23
Brandhorst JS 70
Burns DG 55
Cadman E 71
Cai LZ 63
Carter TH 73
Chateau F 51
Cho K 10
Cohen AM 31
Cohen JR 28
Coltman CA 72
Cooper EH 12
Cope C 50
Craven AC 14
Crespi M 63
Daasch VN 20
Danes BS 58
Danley RA 38
Dayal Y 16
DeLand FH 11
DeLellis RA 16
Dean PB 2
Dees J 48
Deinhardt F 66
Deschner EE 5
Dineen P 28
Dobroschke J 8
Donhuijsen K 36
Doorenbos H 17
Eftekhari F 1
Ericsson M 39
Federle MP 3
Fernsten PD 20
Ferrucci JT 52
Foley JF 32
Fraumeni JF 57
Friedman MA 2
Fujita N 34
Fuller LM 41
Fux HD 46
Gabrial GN 64
Gauss-Muller V 66
Geller N 28
Glazer GM 2
Goebell H 36
Goldberg HI 2
Goldberg HI 25
Goldenberg DM 11
Goudeau A 22
Graham CH 53
Grassi A 63
Greene MH 57
Greenfield A 31
Gregorie HB 30
Groitl H 19
Gutterman J 72
Hafstrom L 37
Hagemeister FB 41
Hahn EG 66
Hammerschmidt M 19
Hankin JH 61
Hanna MG 70
Harder L 38
Harding GT 51
Harris OD 18
Hatfield AK 38
Heilbrun LK 61
Hikita Y 60
Hild P 8
Horiguchi H 33
Hornberger M 66
Houston JG 38
Hunter JT 69
Husemann B 19
Iber FL 56
Ikeda T 34
Ikezaki H 54
Ikuta T 60
Imamura T 6
Irons G 67
Iselius L 59
Ishidate T 61
Ishikawa T 7
Isono K 7
Ito A 65
Ito S 34
Itoh M 33
Iwaseki K 33
Iwatsuki S 27
Jacoby B 44
Janus C 42
Jeffrey RB 3
Jeppsson B 37
Jirtle RL 67
Jones RD 44
Jones RS 67
Jonsson PE 37
Kajitani Y 60
Kalbfleich H 66
Kamath S 43
Kamiya O 33
Kamiyama S 61
Kammer BA 38
Kaneko YJ 34
Kanter P 68
Kaplan EL 9
Karakousis CP 68
Karlin D 44
Kawano Y 54
Kawasaki H 54
Kawaseki K 33
Kessinger A 32
Key ME 70
Kieninger G 25
Kienzle HF 46
Kim EE 11
Kim WS 35
Kinlen LJ 62
Kleibeuker JH 17
Klintmalm GB 27
Kniemeyer H 23
Koerfgen HP 19
Kogawa K 60
Kohrs MB 43
Kojiro M 54
Kondo H 33
Koshiyama H 33
Kottmann F 36
Kuchta N 28
Kune GA 29
Lacombe P 4
Lad T 43
Lambert B 59
Lee NW 26
Lehman C 71
Lemon HM 32
Li FP 57
Lindsten J 59
Lohrmann A 36
Ludvigsson J 59
Lunderquist A 39
Lynch HT 58
Macrae FA 29
Maddux B 41
Maekawa T 60
Magrath IT 42
Mahony B 3
Maiatjalian DA 53
Manolakis G 25
Mansour EG 24
Maor MH 41
Marks RD 30
Martensson H 39
Masuda H 61
Matumoto K 34
Maupas P 22
McCallum RW 45
McGuire WP 43
McLain JR 67
Medina F 4
Metzgar RS 20
Michalopoulos G 67
Miller AG 38
Minami H 45

Miura K. 33
Miyakawa H. 33
Mochizuki F. 34
Moll FL. 47
Mori T. 34
Moss AA. 2
Mueller PR. 52
Mulvihill JJ. 57
Munoz N. 63
Murray-Lyon IM. 14
Nagata K. 33
Naito M. 65
Naito Y. 65
Nakajima A. 33
Nakano H. 33
Nakashima T. 54
Nakayama K. 7
Naunheim K. 9
Nelson MO. 11
Nelson RS. 41
Newberne PM. 64
Nishida H. 60
Nobin A. 39
Nomura A. 21
Nomura A. 61
Novicki DL. 67
Novis BH. 55
Novotny A. 67
O'Briain DS. 16
O'Quigley J. 12
Oda T. 33
Ogawa K. 60
Okamura S. 33
Ong GB. 26
Onoda S. 7
Osborne BM. 41
Ozsoy Z. 8
Palomba PP. 23
Parker EF. 30
Phil D. 55
Portnoy B. 72
Prioleau WH. 30
Qing WG. 63
Qiong S. 63
Rashid SA. 12
Raynaud A. 4
Roberts-Thomson. 29
Roche A. 4
Romet-Lemonne J. 22
Rosenberg MR. 67
Russell DM. 29
Ryden S. 37
Sako M. 39
Sampson J. 18
Sariban E. 42
Satake K. 10
Sato H. 7
Schacht U. 23
Schmit P. 4
Schrager TF. 64
Shah U. 11
Sharma SD. 68
Shatila AH. 24
Sherson ND. 29
Shimizu I. 60
Shirane A. 34
Shires T. 28
Shullenberger C. 41
Siegel JH. 51
Skinner JM. 13
Staemmler-Kienz. 46
Starzl TE. 27
Stemmermann GN. 21
Stemmermann GN. 61
Stjernfeldt M. 59
Straus F. 9
Strom SC. 67
Sugahara N. 34
Sukumar S. 69
Sundqvist K. 37
Sybrandy R. 47
Takahashi R. 34
Tan TG. 48
Terata N. 69
Thomas JL. 1
Tischler AS. 16
Trombetta LD. 73
Tsung SH. 15
Tujimoto G. 60
Umeyama K. 10
Van Blankenstei. 48
Velasquez WS. 41
Von Hoff DD. 72
Wagner W. 19
Walker CH. 14
Wasnich RD. 21
Watanabe H. 65
Weichert HC. 36
Weisbroth SH. 73
Whitehead R. 13
Wolf KJ. 25
Wolfe HJ. 16
Wong J. 26
Wong L. 18
Wood WC. 31
Yagi S. 60
Yamae Y. 34
Yamakawa H. 61
Yamamoto J. 33
Yamauchi M. 33
Yasutomi T. 60
Yatani A. 33
Zeitels J. 9
Zener KA. 57
Zimmerman JA. 73
Zinner M. 35

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-381-847:201

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). CANCERGRAMS are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

U.S.MAIL

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT 19/82/10

NCI/ICRDB/CT19 82/10

PB82-939410

INTERNATIONAL CANCER RESEARCH DATA BANK

ICRDB

CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/10

OCTOBER, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
OCT 28
U. S. GOVT. PUBS.
DEPOSITORY 376

In this issue:

- SCREENING AND DIAGNOSIS 1-7
- PATHOLOGY, STAGING, AND PROGNOSIS 8-14
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS 15-26
- SURGICAL AND RADIATION THERAPY 27-35
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY 36
- SELECTED CLINICAL CORRELATIONS 37-39
- REHABILITATION ASPECTS 40-47
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER 48-66
- SELECTED PRE-CLINICAL STUDIES 67-81

SCREENING AND DIAGNOSIS

1. ENDOSCOPY IN OUTPATIENT PRACTICE.

Clemencon HG
Frobelmweg 12, CH-4600 Olten, Switzerland
Internist (Berlin); 23(5):277-278 1982

Experience with diagnostic endoscopy in seven outpatient centers during the period 1974-1978 is reported. Gastric carcinoma was diagnosed in 902/25,337 patients subjected to upper panendoscopy. The overall incidence of gastric carcinoma was 7.0%, ranging from 5.8% to 9.2% during the 5 yr. Early gastric cancer accounted for 63/902 cases (12/130 in 1974, 10/172 in 1975, 13/181 in 1976, 12/178 in 1977 and 15/229 in 1978). The frequency of relevant diagnoses to (gastric and duodenal ulcers and gastric carcinoma) was 21.9% during the 5-yr period, ranging from 20.7% to 24.4%. Fiber colonoscopy was performed in 6,366 patients: colonic polyps were diagnosed in 1,224/6,366 patients (in 140/669 in 1974, 270/994 in 1975, 253/1,311 in 1976 and 300/1,702 in 1978). Colon carcinoma was diagnosed in 289/6,366 patients (4.54%: 5.8% in 1974, 6.7% in 1975, 3.9% in 1976, 3.6% in 1977 and 4.3% in 1977). The findings indicate that the incidence of endoscopic examinations and

HE 20.3173/2 :

the percentages of gastroenterological diseases diagnosed are fairly constant in good outpatient practice. (16 Refs) (In GER)

2. DIAGNOSTIC AND ECONOMICAL EVALUATION OF UPPER DIGESTIVE ENDOSCOPY AS THE INITIAL INVESTIGATION OF LESIONS OF THE UPPER GASTROINTESTINAL TRACT. A PROSPECTIVE STUDY OF 184 UNSELECTED NOT BLEEDING PATIENTS.

Deschamps JP, Allemand H, Gauffeny B, Perriquey G, Lasseque A, Birh E, Virtton D, Weill F, Carayon P
Service de Gastroenterologie et d'Hepatologie, C.H.U., F-25030 Besancon, France
Gastroenterol Clin Biol; 6(3):229-234 1982

The diagnostic accuracy of endoscopy of the upper gastrointestinal tract in patients who were not bleeding was compared with the results of Ba meal examination. Group I (endoscopy) included 86 patients (23 women and 63 men with an av age of 54 yr). Group II (Ba) included 94 patients (17 women and 77 men). Both groups were similar in age, sex, and clinical symptomatology. There were 60 major lesions discovered in 56 patients and 324 minor lesions found in 161 patients. Tests were normal in 13 patients. Among the major lesions were a case of esophageal cancer. Final diagnosis was obtained from the agreement between the two diagnostic methods, a second endoscopy, and the histological results from biopsy for ulcer and cancer. Endoscopy was clearly superior to Ba x-rays. The endoscopic results were accurate 97% compared to 79% for radiology. Radiology produced 27 false negatives (12 esophageal varies, 1 peptic stenosis, 2 gastric cancers, 9 gastric ulcers, 3 duodenal ulcers). Endoscopy produced five false negatives (3 esophageal varices, 1 gastric ulcer, and 1 duodenal ulcer). (29 Refs) (In FRE)

3. EXPERIENCE WITH LAPAROSCOPY IN THE DIAGNOSIS OF ABDOMINAL MASSES.

Altieri A, Roggia G, Ciavarella G, Tricarico F
Divisione di Chirurgia, Ospedale Regionale di Foggia, Foggia, Italy
Minerva Chir; 37(5):427-429 1982

Seventy-five patients with suspected or ascertained abdominal masses were subjected to laparoscopy. The findings demonstrated gallbladder cancer in nine patients, primary hepatic carcinoma in five, metastatic liver cancer in five, peritoneal metastases of gastric cancer in three, gastric cancer in three, splenic angioblastoma in one, peritoneal metastases of unknown primary tumor in two, mesogastric lymphoma in one, ovarian cancer in seven and uterine fibroma in one. Laparoscopy did not furnish further data concerning localization in the case of palpable abdominal masses, but it unambiguously demonstrated hepatic tumors. Less radical surgery was performed in one patient with cancer of the large intestine, in whom laparoscopy revealed hepatic metastasis, and it made laparotomy unnecessary in three other patients with hepatic cancer. It was possible to avoid unnecessary surgery due to laparoscopic demonstration of peritoneal metastases in the seven patients with ovarian carcinomas. (5 Refs) (In ITA)

4. AN EVALUATION OF PERITONEOSCOPY: AN ANALYSIS OF 600 CASES.

Huang XQ, Huang NX, Li HR, Wu L, Du BH, Sun CY
Dept. Internal Medicine, Hosp. Tianjin Medical Coll., Tianjin, People's Republic of China
Chin Med J [Engl]; 95(3):221-224 1982

The use of peritoneoscopy in 600 patients with suspected gastrointestinal disorders confirmed the preoperative clinical impression in 337 (56.2%), corrected the clinical impression in 220 (36.6%), was an aid in diagnosis in 10 (1.7%), misdiagnosed 8 (1.3%), was ineffective in diagnosing 21 (3.5%), and failed in 4 (0.7%), for an overall accuracy of 92.8%. Principal diseases encountered in the series were liver carcinoma, hepatitis, liver cirrhosis, intra-abdominal tuberculosis, liver abscess, congenital polycystic liver, obstructive jaundice, and metastatic liver carcinoma. (9 Refs)

5. FOLLOW-UP RESULTS OF LIVER ULTRASONOGRAPHY AND LIVER SCINTIGRAPHY AFTER ADJUVANT CHEMO-/IMMUNOTHERAPY FOR MALIGNANT MELANOMA.

Crone-Munzebrock W, Voigt H, Denkhaus H
Radiologische Klinik, Universitatskrankenhaus Eppendorf, Martinistr. 52, D-2000 Hamburg 20, W. Germany
Aktuel Dermatol; 8(2):45-48 1982

Late effects of adjuvant chemoimmunotherapy on the liver were studied by ultrasonography (US) and scintigraphy (SG) in patients with histologically confirmed primary malignant melanoma in Stages T1-3N0M0/Clark level III-V. Patients with a history of liver disease or abnormal liver findings before therapy were excluded from the study. Tumors were removed surgically. Postoperatively patients received chemotherapy (CT) with dacarbazine (250 mg/square meter body surface iv, administered on 5 consecutive days/cycle, followed by a 3-wk interval); CT lasted 6 mo. Immunization with BCG of type Pasteur F followed. Immunization was carried out by multipuncture, weekly for 10 mo and monthly thereafter. US was performed prior to, immediately after, and 8-16 mo (av 12.8 mo) after completion of CT. Hepatic SG was performed prior to, immediately after, and 10-18 mo (av 15.3 mo) after completion of CT. US of 15 patients indicated abnormal findings in only 4 immediately after CT; 3/3 of these showed normalization at the later examination. SG of 24 patiens indicated abnormal findings in 19 patients immediately after CT; 17 of these patients showed normalization at the later examination. Results indicate that chemoimmunotherapy produces reversible alterations in hepatic parenchyma. No late effects of therapy were noted. (22 Refs) (In GER)

6. ANGIOGRAPHIC FINDINGS OF SMALL HEPATOCELLULAR CARCINOMA.

Ohishi H, Ohue S, Imai S, Ueda J, Katuragi M, Fukuzawa A, Matuo N, Otuji H, Yoshioka T, Kichikawa K, Murata T, Iwasaki S, Hosogi Y, Uchida H, Yoshida H
Dept. Radiology, Nara Medical Univ., Kashihara, Japan
Nippon Igaku Hoshasen Gakkai Zasshi; 42(1):1-7 1982

For the purpose of defining the angiographic characteristics and establishing the differential diagnostic criterion for the small hepatic tumors, the angiographic findings of 44 cases of hepatocellular carcinoma, 35 cases of metastatic liver tumor and 23 cases of hepatic hemangioma having a diameter of less than 4 cm were analyzed. All the angiograms of small hepatic tumors permitted classification into five types each of arterial and venous phases. The angiograms of various tumors proved to belong to different combinations of these types. The differential diagnostic criterion, intended for the improvement of differential diagnosis of small hepatic tumors, was determined on the basis of these angiographic combination. The tumor vessels were not clearly viewed in hepatocellular carcinoma of the size less than 2 cm, which, however, showed either the early homogenous or irregular tumor stain in many cases. Hepatocellular carcinoma larger than 2 cm, on the other hand, tended to display distinct dilated and tortuous tumor vessels and irregular tumor stain in the tumor lesion. These were the characteristic findings of small hepatocellular carcinoma. Metastatic liver tumor was characterized by the tumor stain that was defected into a ring-like shape and hepatic hemangioma, by the collective pattern of dilated vessels and densely maculated tumor stain. The microangiogram of hepatocellular carcinoma in which the tumor stain was visualized from the early stage of arterial phase and failed in the imaging the tumor vessels by the ordinary angiography revealed an abundance of dilated and tortuous vessels within the tumor. This suggested the urgency of improvement of angiographic accuracy by performance of magnification angiography, etc for visualization of these tumor vessels. (Author abstract) (18 Refs) (In JPN)

7. ADENOCARCINOMA OF THE GASTROESOPHAGEAL JUNCTION: BARIUM AND CT EXAMINATION.

Freeny PC, Marks WM
Dept. Radiology, Mason Clinic, P.O. Box 900, Seattle, WA, 98111
AJR; 138(6):1077-1084 1982

Seventy-seven patients with adenocarcinoma of the gastroesophageal junction were evaluated with upper gastrointestinal barium studies (single-contrast, 40; double-contrast, 37) and 21 of these had preoperative computed tomography for staging. Single- and double-contrast studies were equally sensitive in detecting exophytic tumors, but double-contrast studies were slightly more sensitive (25 of 26) than single-contrast examinations (21 of 25) in detecting infiltrating tumors. Computed tomography accurately staged 18 (86%) of 21 cases (16 unresectable, 2 resectable). The most reliable computed tomographic findings of tumor unresectability were metastases (liver, adrenal) and local tumor extension, both found in 10 (48%) of 21 cases, and regional adenopathy, present in 8 (38%) of 21 cases. The presence or absence of the periesophageal soft-tissue planes was an unreliable finding and led to both false-positive (2 cases) and false-negative (4 cases) diagnoses. CT-guided percutaneous fine-needle aspiration biopsy was used successfully in four cases to obtain a cytologic diagnosis of metastatic adenocarcinoma. (Author abstract) (41 Refs)

PATHOLOGY, STAGING, AND PROGNOSIS

8. GASTRIC POLYPS; THEIR MORPHOLOGICAL AND ENDOSCOPICAL CHARACTERISTICS AND RELATION TO GASTRIC CARCINOMA.

Laxen F, Sipponen P, Ihamaki T, Hakkiluoto A, Dortscheva Z
Div. Gastroenterology, Second Dept. Medicine, Univ. Helsinki, 00290 Helsinki 29, Finland
Acta Pathol Microbiol Scand [A]; 90(3):221-228 1982

In 13,200 consecutive gastroscopies polyp-like lesions were found in 454 patients and of these 425 were examined histologically. Tumors other than polyps were excluded and there remained 357 cases which were divided in four groups: adenoma (8%), hyperplastic polyp (34%), foveolar hyperplasia (21%) and inflammatory polyp (36%). Transitional forms between different groups were seen and sometimes characteristics of different polyp types could be seen within one and same polyp. In addition, the mean age of the patients increased in order: inflammatory polyp, foveolar hyperplasia, hyperplastic polyp and adenoma, suggesting that the different groups are not separate entities but represent related stages in the morphogenesis of gastric polyps. Two hundred nineteen cases out of 357 patients were reexamined endoscopically on av 2.5 yr after the first examination. This examination revealed new polyps in 26% of all cases and spontaneous disappearance of the polyps in 14% of cases suggesting that gastric polyps, particularly those of the hyperplastic and inflammatory type are in a dynamically labile state. Gastric carcinoma was found in 27 (8%) of patients with polyps. In four of these cases the carcinoma was found at the reexamination (which in 3 cases was performed within 0.5 and 1 case within 1.5 yr). In 14 cases carcinoma was found inside the polyps and in 6 of these carcinoma was 'early' in its growth. In 13 cases carcinoma was found outside the polyps and in all of these carcinoma was 'advanced'. Carcinoma was found in 38% of adenoma cases and in 5% of cases with polyps other than adenomas. (Author abstract) (26 Refs)

9. PRECANCEROUS LESIONS OF THE UPPER DIGESTIVE TRACT.

Mittelmeier HO, Pliess G
Pathologisches Institut der Stadt Nurnberg, Flurstrasse 17, D-8500 Nurnberg 90, W. Germany
Therapiewoche; 32(14):1871-1872,1874,1876,1878,1883 1982

Various lesions of the upper digestive tract, termed precancerous lesions (PL), carry an increased risk of malignant growth. PL arise in particular locations. Risk factors contribute to the development of PL. PL develop as epithelial preneoplasias, which then become carcinoma in situ or early carcinoma; conversion to invasive carcinoma and then to metastatic carcinoma may follow. Risk factors for carcinoma of the esophagus include use of alcohol and tobacco; risk lesions include benign strictures, old alkali burns, pulsion diverticula, achalasia, and hyperkeratosis with Plummer-Vinson syndrome. PL of the esophagus include hyperkeratosis with tylosis palmaris et plantaris and columnar epithelial metaplasia associated with reflux esophagitis. Risk factors for carcinoma of the stomach include familial history of stomach cancer, blood type A, and acanthosis nigricans; risk lesions include stomach resection, gastric polyps, Menetrier's disease, pernicious gastritis, and lymphatic hyperplasia. PL of the stomach include adenomatous polyps, border-line lesions of the protruded type, and polypous early carcinoma of Types I and IIa. Carcinomas of the duodenum are very rare. Risk factors are unknown; risk lesions include gluten enteropathy, herpetiform dermatitis, and hereditary intestinal polyposis associated with Peutz-Jeghers syndrome or Gardner's syndrome. PL of the duodenum are unknown. High-risk lesions of the upper digestive tract are indications for endoscopic biopsy at appropriate intervals. (5 Refs) (In GER)

10. INSULINOMA: STATISTICS, ESTABLISHED PHYSIOLOGICAL MECHANISMS, AND POLICY.

Ishii H, Nagata S, Mikami F, Takahashi H
Dept. Internal Medicine, Keio Jikei Univ. Sch. Medicine, Tokyo, Japan
Nippon Rinsho; 40(2):434-440 1982

Statistics on Japanese patients with insulinoma show that the patients were 4-85 yr old, 60% of the patients were 30-60 yr old, and the male:female ratio was 1:1.2. Primary clinical symptoms of insulinoma due primarily to conditions of on high blood insulin level and hypoglycemia, are mental confusion in the early morning prior to eating, convulsions, double vision, delirium and hallucination profuse sweating, and weakness. Insulinomas in Japanese patients are located most often in the pancreatic tail and least often in the pancreatic head. Most insulinomas are less than 2 cm in diameter, and 13% of insulinomas in Japan are malignant. Based on data concerning characteristics of the basic hormones involved in insulinoma, abnormal responses of stimulatory hormones, and experimental research on suppression of insulin hormones, a treatment policy was suggested. Surgery is not possible in cases of malignant insulinoma when there is localized lymph node or hepatic metastasis. Many of the malignant insulinoma patients also have hypoglycemia in spite of glucose drip infusion; in these cases, anticancer agents are administered in combination with insulin antagonists. (36 Refs) (In JPN)

11. DIAGNOSTIC PROBLEMS OF INSULINOMA.

Bai Y, Xu XH, Jin ZM, Liu W, Liu JH, Chi ZS

Endocrinology Dept., Capital Hosp., Chinese Acad. Medical Sciences, Beijing, People's Republic of China

Chin Med J [Engl]; 95(3):181-185 1982

The clinical characteristics of insulinoma in 61 patients (52 males and 9 females) are described and compared with the symptomatology in pancreatic islet cell hyperplasia (PICH) in 3 patients (2 males and 1 female). Of the 61 cases, 57 were monoadenoma and 4 polyadenoma. Age of insulinoma onset ranged from 13-57 yr. Insulinoma diagnosis was confirmed on first visit in 10 cases, within 0.5 yr in 25, in 0.5-2 yr in 11, and in 2-6 yr in 11. the patients were classifiable into three groups based on symptoms: hypoglycemic coma (17 cases, including 1 PICH case); epileptic attack (37 cases, including 2 PICH cases); and other organic neuropsychiatric abnormalities (10 cases). Of the 61 cases, 26 were misdiagnosed, 13 as psychoneuroses, 9 as psychoses, and 1 each as olivopontocerebellar atrophy, myasthenia gravis, autonomic dysfunction, and Meniere's syndrome. Onset of attacks was closely related to meals, generally occurring before meal time or just post-feeding. Most attacks were relievable by feeding or iv glucose injection. Due to the close resemblance of insulinoma to neuropsychiatric disorders, differential diagnosis is difficult and may be delayed for years. Careful inquiry into past history (hypoglycemic attacks), fasting blood glucose determination, and time of attack occurrence may aid in the early diagnosis of this tumor. (13 Refs)

12. EARLY STOMACH CANCER.

Kharchenko VP, Sutiagin AG, Radchenko NN

Res. Roentgenoradiological Inst., Moscow, USSR

Sov Med; (4):76-79 1982

Literature data on detection, classification, and treatment of early stomach cancer are reviewed. The 5-yr survival rates in the patients with involvement of gastric mucosa alone was 95%. According to the conventional definition, early stomach cancer includes the tumors infiltrating the gastric mucosa and submucous layer. The size of the tumor is not directly related to the depth of infiltration. The incidence of metastases to the regional lymph nodes ranges from 3-6% in the patients with involvement of gastric mucosa alone to 9-21.4% in the patients with invasion of the submucous layer. The most frequent localizations of early cancer are the antral region (40-70%), corpus of the stomach (15-33%), and cardia (4-7%). The patients with the history of stomach polyps frequently develop differentiated adenocarcinomas, compared with undifferentiated carcinomas in the patients with the history of stomach ulcer or gastritis. Diagnostic examination of the patients with early cancer include x-ray, gastroscopy, and cytological analysis of biopsy specimens. Subtotal distal or proximal resection with removal of regional lymph nodes is the treatment of choice. (60 Refs) (In RUS)

13. GASTRIC MALIGNANCY: TEN YEAR EXPERIENCE AT A COMMUNITY TEACHING HOSPITAL.

Ruggiero RP, Fischer S

Dept. Surgery, Episcopal Hosp., Philadelphia, PA, 19125

J Surg Oncol; 20(2):129-130 1982

A 10-yr review of gastric malignancy was undertaken and several factors examined. The degree of organ involvement played a significant role in determination of survival. Surgical resection, either palliative or curative, was associated with a more favorable short-term survival and bypass alone appeared to add nothing to patient survival time. The general lack of symptoms in early gastric cancer appears to be a major determinant of the advanced state of malignancy in these patients. Early screening may represent a partial solution to this dilemma. (Author abstract) (4 Refs)

14. PANCREATIC CANCER.

Cohn I

Dept. Surgery, Louisiana State Univ. Medical Sch., New Orleans, LA

Nippon Gan Chiryo Gakkai Shi; 17(2):241-249 1982

The incidence, etiology, prognosis, and types of cancer in the pancreas are discussed. One autopsy series showed that only 63/419 cases were primary to the pancreas. Among the 273 metastatic cases, the largest numbers arose in the breast, lung, stomach and colon or from melanoma. Some of the newer diagnostic procedures are discussed, as are operative procedures, use of radiotherapy, and some problems of diagnosis. (4 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

15. PROGNOSTIC VALUE OF PREOPERATIVE SERUM CEA LEVEL COMPARED TO CLINICAL STAGING: II. STOMACH CANCER.

Staab HJ, Anderer FA, Brummendorf T, Hornung A, Fischer R

Friedrich Miescher Laboratorium, Max Planck Gesellschaft, Spemannstr. 37-39, 7400 Tubingen, W. Germany

Br J Cancer; 45(5):718-727 1982

In a clinical investigation of postoperative survival after primary surgery for stomach cancer, 390 patients were registered since 1974. The potential prognostic parameters examined within the first days of hospitalization for primary resection included age of the patients, operability, tumor extension (TNM classification) and tumor Stages I-IV (UICC). Statistical treatment of the data revealed that each of the clinical parameters covers critical ranges associated with highly significant differences in patient survival. The preoperative serum CEA concentration exhibited prognostic significance in addition to the criteria of operability and tumor extension. In selected subgroups of patients with distinct resectability and tumor extension, ranges of preoperative CEA concentration could be specified which were associated with statistically significant differences in the patient survival. The results indicate that the preoperative serum CEA level can be an independent prognostic parameter in stomach cancer. (Author abstract) (15 Refs)

16. THE DIAGNOSIS OF CANCER THROUGH THE SYSTEMATIC MONITORING OF SERUM CARCINOEMBRYONIC ANTIGEN IN A DEPARTMENT OF INTERNAL MEDICINE.

Geerts L, Bury P, Moisse R
(c/o Bury) Departement de Clinique et de Pathologie medicales, Institut de Medicine, Hopital de Baviere, 4020 Liege, France
Rev Med Liege; 36(3):106-116 1981

In a series of 434 patients whose serum levels of carcinoembryonic antigen (CEA) were tested, 364 had noncancerous diseases. In this group, 324/364 (89%) had normal levels of CEA. Questionable levels of CEA were present in 26 patients (7%) and 14 patients (4%) had abnormal CEA levels. Among the 70 patients with cancer, 35 (50%) had normal CEA levels, 9 (13%) had questionable levels of CEA and 26 (37%) had abnormal CEA levels. The sites of the primary tumor in patients with abnormal CEA included sigmoid colon (7), pancreas (3), prostate (1), breast (1), lungs (5), brain (1), bladder (1), and rectum (1). The high number of false negative (50%) discredited the method as a means at early diagnosis. When the CEA levels were questionable or abnormal, cancer was discovered in 35/74 (47%) cases. In advanced cases, more than half of the patients (19/35) had abnormal levels of CEA. In 7/12 rectosigmoid and in 4/9 pancreatic cancers, when was discovered the cancer was generalized. Abnormal levels of CEA were found in 6/10 lung cancers in which metastases would not have been detected by other methods. (31 Refs) (In FRE)

17. IMMUNOELECTRON MICROSCOPIC STUDY ON ALPHAFETOPROTEIN SYNTHESIS.

Lin Chu M, Chang TW, Chuong CM, Lin WS
Dept. Pathology, Coll. Medicine, Natl. Taiwan Univ., Taipei, Taiwan
Taiwan I Hsuch Hui Tsa Chih; 81(2):127-134 1982

Human fetal liver and hepatoma cells were compared with respect to ultrastructural localization of alphafetoprotein (AFP) by immunoelectron microscopy. The AFP-synthesizing cell was found to be a hepatocellular carcinoma cell with the same pattern of positive distribution of immunoenzyme reaction products characteristic of AFP in the cytoplasm as those of the fetal hepatocytes. Synthesis of AFP in the tumor state appears to be the result of depression of the oncodevelopmental protein (AFP), which after depression follows the same pathway as in the fetal state. (22 Refs)

18. ALPHAFETOPROTEIN LEVELS MEASURED BY RADIOIMMUNOASSAY IN VARIOUS LIVER MALIGNANCIES.

Chang FY, Chen TC, Fong MS, Lin S, Yeh SH
Div. Gastroenterology, Tri-Service General Hosp., Taipei, Taiwan
Taiwan I Hsueh Hui Tsa Chih; 81(2):224-231 1982

Alpha-fetoprotein (AFP) levels in 114 patients with primary hepatocellular carcinoma (HCC), 11 patients with cholangiocarcinoma, and 17 patients with metastatic liver cancer were determined by radioimmunoassay, and compared with similar determinations in 44 adults with normal liver function. AFP levels in the healthy subjects never exceeded 20 nano(n)g/ml; 39 determination were less than 10 ng/ml. Of the 142 cancer patients, 93/114 HCC, 3/11 cholangiocarcinoma, and 2/17 metastatic liver cancer patients had AFP levels greater than 20 ng/ml. Rates of elevation of AFP in cancer patients seemed to decrease with increasing patient age, but the relationship as not statistically significant. Among 75 hepatitis B surface antigen (HBsAG)-positive patients, 86.7% had AFP levels greater than 20 ng/ml. Of 15 HBsAg-negative HCC patients, 66.7% had AFP levels greater than 20 ng/ml. The relation of HBsAg-positivity to elevated AFP level was not statistically significant. More than half of the HCC patients had AFP level greater than 320 ng/ml, but not all HCC patients had elevated AFP due to lower secretion. The relationship of HCC to HBsAg-positivity may be causal in this Taiwanese population, in which both hepatitis B infection and HCC are common. (32 Refs)

19. HYPERPARATHYROIDISM ASSOCIATED WITH ZOLLINGER-ELLISON'S SYNDROME. 4 CASES.

Rigaud D, Rigaud D, Bauer P, Hervoir P, Fassno JJ, Moreau J, Mignon M, Bonfils S

Service de gastro-enterologie, Hopital Bichat, 46, rue Huchard, F 75877 Paris Cedex 18, France

Nouv Presse Med; 11(17):1299-1303 1982

Four patients (3 men, 1 woman; 29-56 yr old) with both primary hyperparathyroidism (HPT) and Zollinger-Ellison's syndrome (ZET) are described. Serum levels of calcium, phosphorus, and pancreatic polypeptide were determined. In patients with ZET and HPT, the possibility of multiple endocrine neoplasia should be investigated. When ZET is associated with HPT, HPT should be treated first. (17 Refs) (In FRE)

20. ARGYROPHIL CELLS IN EARLY GASTRIC CARCINOMA: AN IMMUNOHISTOCHEMICAL AND ULTRASTRUCTURAL STUDY.

Tahara E, Ito H, Shimamoto F, Taniyama K, Iwamoto T, Sumiyoshi H, Kajihara H, Yamamoto M

First Dept. Pathology, Hiroshima Univ. Sch. Medicine, 1-2-3 Kasumi, Minami-ku, Hiroshima 734, Japan

J Cancer Res Clin Oncol; 103(2):187-202 1982

Eighteen argyrophil cell carcinomas in 101 early gastric carcinomas were examined histologically, ultrastructurally, and immunohistochemically for polypeptides, carcinoembryonic antigen (CEA), lysozyme, and human chorionic gonadotrophin (hCG). Seven of these 18 tumors had gastrin, and 2 of 7 tumors also contained somatostatin. In all of these 18 tumors CEA were demonstrated. Seven had lysozyme and 5 of 7 tumors also contained gastrin; hCG were present in 4 of 18 tumors and 2 of 4 tumors had gastrin, CEA, mucin, and lysozyme simultaneously. Argentaffin cells were found in 7 of 18 tumors. Of the above seven tumors containing gastrin, three had argentaffin cells. Ultrastructurally, several types of secretory granules were noted and tumor cells resembling D1-or P cells were present in 9 of the 18 tumors. Macroscopically, many of the tumors showed IIc or IIc + III type. Histologically, the 18 tumors consisted of 6 well differentiated adenocarcinomas and 12 poorly differentiated adenocarcinomas including signet-ring cell carcinoma. These 12 tumors frequently developed in the stomach of young females. In view of our previous investigation, it was suggested that the IIc-type argyrophil cell carcinoma histologically showing poorly differentiated adenocarcinoma may be related to scirrhous carcinoma of the stomach. (Author abstract) (30 Refs)

21. PROLONGED SECRETORY INHIBITION DURING CIMETIDINE TREATMENT IN ZOLLINGER-ELLISON PATIENTS.

Stage JG, Bonfils S, Mignon M, Stadil F
Surgical Dept. C 2122, Rigshospitalet, Blegdamsvej 9, 2100 Copenhagen 0, Denmark

Scand J Gastroenterol; 17(3):401-404 1982

In 23 Zollinger-Ellison patients who had been treated continuously with cimetidine for more than 3 mo repeated measurements of basal acid output (BAO) were carried out 10-12 hr after the last drug dose, to evaluate the prolonged inhibition of gastric acid during continuous cimetidine treatment. Most patients had a markedly prolonged inhibition of BAO after a few weeks of treatment compared with the BAO before cimetidine treatment. The prolonged inhibition became significant after 6 to 12 mo of treatment (p less than 0.05). In some patients the prolonged inhibition was transient. In seven patients cimetidine therapy was discontinued for 3 days. Measurement of BAO after 12, 36, and 60 hr of withdrawal revealed a marked inhibition lasting more than 60 hr in four patients. Determinations of plasma cimetidine could not demonstrate any detectable amounts after 12 hr of withdrawal. The prolonged inhibition of BAO observed during continuous cimetidine treatment is of significant importance for evaluating secretory data. The phenomenon is still unexplained. (Author abstract) (6 Refs)

22. THE ROLE OF A SERUM DNA-BINDING PROTEIN (64DP) IN THE DIAGNOSIS OF MALIGNANT NEOPLASMS.

Mitomi T, Nakasaki H, Tajima T, Ogoshi K, Tsuda M, Katsunuma T
Dept. Surgery, Sch. Medicine, Tokai Univ., 259-11 Isehara, Japan

Int Adv Surg Oncol; 5:245-259 1982

Role of the DNA-binding protein with mol wt 64,000 dalton (64DP) as a tumor marker in diagnosing and monitoring patients with malignant disease is described. 64DP was measured with column sodium dodecyl sulfate-polyacrylamide gel electrophoresis and a single radial immunodiffusion method. The elevation of serum 64DP in 96 patients with malignant disease over that observed in normal controls or in patients with nonneoplastic disease appeared quite significant. Serum 64DP levels in 26 patients with stomach carcinoma were categorized according to clinical stages. No clear correlation was observed between the levels of 64DP and the clinical stage. Twenty-nine patients were subjected to serial determination of serum 64DP to monitor the response to treatment. Serum 64DP showed a drop approx 3 wk after resectional treatment. The 64DP level did not appear to decrease to normal value even after complete removal of the malignant lesion by radical gastrectomy. Eleven patients with recurrent stomach carcinoma were tested for 64DP. The level ranged from 31-220 ug/ml in these patients. Approx half of the patients did not show elevation of 64DP levels. Patients with carcinoma of other organs showed preoperatively high values of 64DP with subsequent decreases 3-4 wk after successful surgical treatment. Analysis of the amino acid composition of 64DP indicated that it is rich in leucine, glutamic acid, and aspartic acid. Amino acids in lower amounts were tryptophan and cysteine plus cystine. (14 Refs)

23. ALPHA-1-ANTITRYPSIN DEFICIENCY IN SOUTHERN AFRICAN HEPATOCELLULAR CARCINOMA PATIENTS. AN IMMUNOPEROXIDASE AND HISTOCHEMICAL STUDY.

Cohen C, Berson SD, Budgeon LR
Dept. Anatomic Pathology, Milton S. Hershey Medical Center, Hershey, PA, 17033

Cancer; 49(12):2537-2540 1982

An increased frequency of alpha-1-antitrypsin deficiency (AATD) has been reported in patients with hepatocellular carcinoma (HCC) in Scandinavia and England. Using a specific immunoperoxidase technique for alpha-1-antitrypsin (AAT) and periodic acid-Schiff (PAS) with and without diastase predigestion, the authors examined nonneoplastic autopsy liver tissue from 58 black southern African patients with HCC and from 54 controls. No periportal PAS-positive diastase-resistant globules containing AAT (specific for AATD) were found in liver tissue from either group. A finely granular diffuse cytoplasmic AAT staining (not removed by diastase predigestion) was present in hepatocytes in a 'checkerboard' pattern within the lobule in 33 (57%) HCC patients and in 20 (37%) controls (p less than 0.1), and was particularly prominent adjacent to tumor in 11 HCC patients. Alpha-1-antitrypsin was present in neoplastic cells in 18 of the 40 HCC examined (45%). These findings suggest no major role for AATD in the etiology of HCC in southern Africa. (Author abstract) (33 Refs)

24. HISTOLOGIC GROWTH PATTERN OF HEPATOCELLULAR CARCINOMA: RELATIONSHIP TO ORCEIN(HEPATITIS B SURFACE ANTIGEN)-POSITIVE CELLS IN CANCER TISSUE.

Nakashima T, Kojiro M, Kawano Y, Shirai F, Takemoto N, Tomimatsu H, Kawasaki H, Okuda K
(c/o Okuda) First Dept. Medicine, Chiba Univ. Hosp., Chiba 280, Japan

Hum Pathol; 13(6):563-568 1982

The histologic pattern of tumor growth at tumor-nontumor boundaries was studied in 60 livers bearing hepatocellular carcinoma. Three growth patterns, arbitrarily described as 'sinusoidal,' 'replacing,' and 'encapsulated,' were distinguished. Cancer cells growing in the sinusoids between liver cell cords (sinusoidal pattern) were anaplastic; those growing in an expansile fashion and acquiring a fibrous capsule (encapsulated pattern) were most differentiated; and those growing into the cord of liver cells and replacing them (replacing pattern) were differentiated to an intermediate degree. There was certain relation between the histologic growth patterns and gross morphologic features of the tumors. Test results for 20 of the 60 cases were positive for serum hepatitis B surface antigen (HBsAg), and the livers also contained orcein-positive cells. Orcein-positive cells were frequently seen at the border between tumor and parenchyma. Cells containing HBsAg as an orcein-positive inclusion were present in cancer tissue in three cases. When serial sections were made from such areas and stained alternately with hematoxylin and eosin and orcein, it was found that these cells were hepatocytes blended with cancer cells. This phenomenon was related to the growth pattern of tumor cells. Orcein-positive cells were never found in metastatic lesions. (Author abstract) (28 Refs)

25. DIFFUSE NODULAR LYMPHOID HYPERPLASIA OF THE ADULT SMALL INTESTINE WITHOUT DETECTABLE SYSTEMIC OR DIGESTIVE IMMUNODEFICIENCY.

Matuchansky C, Duprey F, Briand M, Babin P, Touchard G, Bloch P, Lenormand Y, Morichaud-Beauchant M
Service de Gastroenterologie, CHU La Miletrie, F-86021 Poitiers, France
Gastroenterol Clin Biol; 6(3):239-248 1982

Two cases, of diffuse nodular lymphoid hyperplasia (NLH) were diagnosed in a 25 and an 18 yr old patient. In one patient there were no clinical or biological signs of an associated malignant lymphoma (ML) and exploratory laparctomy failed to reveal any ML. In the other patient, ML of the jejunum had been recognized and diagnosed at the same time as the NLH. Normal plasma cell density, normal immunoglobulin concentrations were normal. There was no monoclonal immunoglobulin at immunoelectrophoresis and antibody activities were normal. (29 Refs) (In FRE)

26. IMMUNOLOGICAL MARKERS.

Matsuno S, Kobari M, Kodera T, Sato T
First Dept. Surgery, Tohoku Univ. Sch. Medicine, Sendai, Japan
Nippon Rinsho; 40(1):51-57 1982

Diagnostic significance of alpha-fetoprotein (AFP), carcinoembryonic antigen (CEA), immunosuppressive acidic protein (IAP), pancreatic oncofetal antigen (POA), basic fetoprotein (BFP), and ferritin (F) as tumor markers for hepatic, choledochal, and pancreatic cancer is discussed. AFP and POA are considered to be particularly good markers for liver cancer and pancreatic cancer, respectively, due to the particular characteristics of the organs themselves and the high frequency of the presence of such markers associated with tumors. However, use of these markers alone is not sufficient for early detection of the tumors, so combination assays must be performed. Combining measurements of AFP, BFP, and F for liver cancer, BFP, IAP, and CEA for choledochal cancer, and AFP, BFP, IAP, CEA, and POA for pancreatic cancer was suggested, in conjunction with the leukocyte adherence test, to improve immunological diagnosis of cancer. (23 Refs) (In JPN)

SURGICAL AND RADIATION THERAPY

27. CARCINOMA OF THE ESOPHAGUS: TWELVE YEARS' EXPERIENCE WITH A PHILOSOPHY FOR PALLIATION.

Hankins JR, Cole FN, Attar S, McLaughlin JS
Div. Thoracic and Cardiovascular Surgery, Univ. Maryland Hosp., Baltimore, MD, 21201
Ann Thorac Surg; 33(5):464-472 1982

A superior method of palliation in patients with esophageal carcinoma is described. The method is based upon the premise that squamous cell carcinoma of the esophagus is usually incurable and that the primary therapeutic objective should be palliation, with cure an important but secondary goal. Previous attempts to cure had given dismal results; of 234 patients treated curatively, only 6 survived 5-yr. Of the 107 patients managed by the new protocol, 95 received palliation superior to that obtainable with previous methods. Of 27 patients with squamous cell carcinoma of the upper third of the thoracic esophagus, 20 were treated primarily with radiation. All but one of these patients achieved restoration of satisfactory deglutition. Duration of survival ranged from 2.3 to 29.5 mo, with a mean of 8.4 mo. Restoration of swallowing function was achieved in seven patients treated by operation due to severe obstruction or actual or impending tracheobronchial improvement. In patients with squamous cell carcinoma in the middle third of the esophagus, limited resection with esophagogastrostomy was performed through a right thoracotomy and midline laparotomy. Six of fifty-eight patients treated in this manner died postoperatively. The quality of palliation provided by esophagogastrectomy was excellent, with all surviving patients able to swallow solid food virtually until time of death. Twenty-two patients with squamous cell carcinoma of the lower third of the esophagus underwent thoracotomy according to the protocol. All had the ability to ingest solid food restored. Nine of these patients survived more than 1 yr. Three lived more than 3 yr, including one who lived 11 yr and 6 mo. Statistical analysis of survival curves is provided. (23 Refs)

28. FOLLOW-UP OF 120 PATIENTS AFTER TOTAL GASTRECTOMY.

Gazzaniga GM
I Divisione di Chirurgia Generale, Ospedali Civili di Genova, Genova, Italy
Minerva Chir; 37(4):269-278 1982

One hundred fifty-seven total gastrectomies (TG: 147 due to gastric cancer, others due to diffuse polyposis, Zollinger-Ellison's syndrome, hemorrhagic gastritis, and ulcers) were performed. After TG, reconstruction by Mouchet-Camay's esophagojejunoduodenoplasty (EJDP) was performed in 117 patients, EJDP by Longmire-Henley's in 12, esophagojejunostomy (EJO) in 14; esophagoduodenostomy (EDO) in 13, and esophagocolonoduodenoplasty (ECDP) in 1. Nine of the patients died after surgery. The study included clinical, hematochemical, metabolic, radiologic, manometric, endometric, and bioptic examinations performed at different intervals after surgery. In 101 patients the tests were performed after EJDP, in 10 after EDO, in 8 after EJO, and 1 after ECDP. Esophagitis was absent in 73/120 patients, was slight in 35 (27 after the EJDP), and was marked in 12 (3 after the ECDP). Dumping was absent in 107/120 patients, was slight in 11 (8 after the EJDP), and was marked in 2 (none after the EJDP). Diarrhea was absent in 20, slight in 13 (10 after the EJDP), and marked in 2 (none after, the EJDP). Feeding capacity was good in 82/120, wt was good in 56/120, and quality of life was good in 58/120. (52 Refs) (In ITA)

29. PANCREATIC RESECTION IN RADICAL GASTRECTOMY FOR CANCER.

Prete F, Neri V, Scoppetta L, Montemurro S
Istituto di Patologia Chirurgica, Universita di Bari, Bari, Italy
Minerva Chir; 37(5):471-472 1982

Fifty-four patients with gastric carcinoma were subjected to total gastrectomy during the period 1960-1979. Pancreatic resection was performed in the course of total gastrectomy in 29/54 patients. The postoperative complication rates were 9% for all 54 patients and 10.3% for those subjected to pancreatic resection. The complications included mostely acute pancreatitis, and external pancreatic fistula amenable to conservative treatment without sequelae. No significant differences were found in the postoperative morbidity and mortality rates between the patients subjected total gastrectomy and those subjected additionally to pancreatic resection. The 3-and 5-yr survival rates were 34% and 15.9%, respectively, for all 54 patients and 30% and 15% for those subjected to total gastrectomy with pancreatic resection. Resection of the body and tail of pancreas is considered an essential element of radical gastrectomy for high gastric carcinoma. (4 Refs) (In ITA)

30. CONDITIONS AFTER TOTAL RESECTION OF THE STOMACH.

Farthmann EH, Fritsch WP
Chirurgische Universitatsklinik, Hugstetterstr. 55, D-7800 Freiburg, W. Germany
Z Gastroenterol; (Special17):17-23 1982

Gastrectomy is most often performed for treatment of adenocarcinoma of the stomach. Effects of gastrectomy include malnutrition, dumping syndrome, reflux esophagitis, and anemia. Creation of an artificial stomach reduces the 'full' feeling after eating, but does not improve uptake of nutrients. Reflux esophagitis can be avoided by use of surgical techniques such as the Roux-Y anastomosis. Dumping syndrome can be minimized by proper diet. Iron-deficiency anemia can be eliminated by substitution therapy. (no Refs) (In GER)

31. ENDOSCOPIC ASPECTS AND SURGICAL POSSIBILITIES IN CARCINOMA OF THE PARTIALLY RESECTED STOMACH.

Meyer HJ, Huchzermeyer H, Pichlmayr R
Zentrum Chirurgie, Klinik fur Abdominal- und Transplantationschirurgie, Medizinische Hochschule Hannover, Karl-Wiechert-Allee 9, D-3000 Hannover 61, W. Germany
Therapiewoche; 32(13):1815-1821 1982

Of 859 patients undergoing surgery for cancer of the stomach, 52 (50 men and 2 women, 38-76 yr old, av age 61.7 yr) had prior partial resection of the stomach for histologically confirmed benign diseases. Previous conditions included ventricular ulcers (33 patients), duodenal ulcers (14 patients), and other benign diseases (5 patients). The av interval between the first surgery and diagnosis of cancer was 22.8 +-11.3 yr. Surgical procedures after diagnosis of cancer included resection of the remaining stomach (21 patients) and subtotal resection (5 patients). Nonresective surgery was performed in 26 patients: 15 underwent exploratory surgery, 6 had endoprosthesis, and 5 underwent gastroenterostomy. Carcinomas were located at the site of anastomosis in 30 patients; in 19 patients tumors were too extensive to determine the origin; in 3 patients the tumors were located in the proximal third of the stomach or the esophagogastric transitional area. Postoperative lethality was 25%. Thirteen patients survived at least 1 yr, 5 survived 2 yr, and 2 were alive 5 yr after resection of cancer. Selective endoscopic biopsy controls beginning no later than 15 yr after partial gastric resection are urged, because the control of gastric cancer requires an early detection and a curative surgery. (25 Refs) (In GER)

32. EXTRAPANCREATIC, EXTRAINTESTINAL GASTRINOMA. EFFECTIVE TREATMENT BY SURGERY.

Wolfe MM, Alexander RW, McGuigan JE
(c/o McGuigan) Dept. Medicine, Univ. Florida, Box J-214, Gainesville, FL, 32610
N Engl J Med; 306(25):1533-1536 1982

Four patients [a 61-yr-old woman with gastric-outlet obstruction secondary to duodenal-ulcer disease (Patient 1), a 51-yr-old man who was admitted to hospital with a 14-yr history of recurrent duodenal ulcer that was unresponsive to medical management (Patient 2), a 36-yr-old woman with epigastric pain and diarrhea (Patient 3), and a 15-yr-old boy with hematemesis, abdominal pain, and diarrhea (Patient 4)] with Zollinger-Ellison syndrome caused by extrapancreatic, and extraintestinal gastrinomas, are reported. Surgical resection of gastrinoma in each patient resulted in an apparently complete cure. Histologic examination of tumor in each patient demonstrated features of an islet-cell tumor. In Patient 1 the tumor was located in the left lobe of the liver and was separated from adjacent normal liver tissue by fibrous capsule. The tumors in Patients 2 and 4 were both encapsulated cystic masses located within the lesser omentum. In Patient 3 the tumor was resected from the peripancreatic area. Microscopy analysis showed an islet-cell tumor with sclerotic, hyalinized stroma. In Patients 1, 2, and 3 hypertrophic gastropathy with parietal-cell hyperplasia was present microscopically in the resected stomachs. No other evidence of primary or metastatic tumor in the resected stomachs or lymph nodes was observed. Measurement of extractable tumor-tissue gastrin demonstrated large quantities of immunoreactive gastrin in both tumors from which fresh tissue was available (Patients 1 and 4). After surgical removal of gastrinomas the serum gastrin levels in each patient promptly decreased to normal. (20 Refs)

33. HEPATECTOMY IN CHILDREN.

Iwatsuki S, Starzl TE
Dept. Surgery, Univ. Pittsburgh, Sch. Medicine, Pittsburgh, PA, 15261
Int Adv Surg Oncol; 5:163-171 1982

Fourteen children (6 males, 8 females, 11 mo-16 yr old) were treated with subtotal hepatectomy. Ten children had primary malignant liver tumors, 2 metastatic liver tumors, 1 adenoma, and 1 a liver resection for trauma. Eleven of the 12 patients with malignant disease received chemotherapy after hepatic resection, and 4 were given radiation therapy. The agents used for chemotherapy were variable and were influenced by the histopathology. Nine of 10 children survived at least 1 yr. Seven of the 10 children were alive with follow-up periods of 1-7 yr, and 6 of them were disease-free. Eight children (1 yr 7 mo-16 yr old) with primary maligant liver tumors were treated by total hepatectomy and liver replacement (orthotopic liver transplantation). Three children received liver transplantation for end-stage liver disease. Two other children had end-stage liver disease and concomitant primary liver malignancy which was known prior to transplantation. Three children had primary liver malignancy which was not resectable by conventional technique of subtotal hepatectomy. Seven hepatocellular carcinomas and one hepatoblastoma were diagnosed. Transplantation was decided upon as a means of extending the limit of resection. For immunosupression the patients received azathioprine, prednisone, and horse antilymphocyte globulin. One operative death was observed. Five children died with recurrent tumor between 3-15 mo after transplant, after a mean survival of 8 mo. Two children were alive and free of disease 3 yr and 12 yr, respectively, after transplant. In both children, primary liver malignancy was discovered at the pathological examination of the removed organ, and thus the tumors were incidental findings. (15 Refs)

34. TRANSCATHETER ARTERIAL EMBOLIZATION THERAPY.

Yamada R, Nakamura K
Dept. Radiology, Wakayama Prefectural Medical Coll., Wakayama, Japan
Nippon Rinsho; 40(1):183-190 1982

Appropriate circumstances to use embolization, the method of transcatheter arterial embolization, methods to evaluate embolization, complications and side effects of embolization, and results of treating patients with embolization are discussed. Six-mo, 1-yr, and 2-yr actuarial survival rates of 60 patients who were treated with embolization for unresectable hepatocellular cancer were 61%, 42.7%, and 30.2%, respectively. Evaluation of the embolization is performed by angiography, measuring postoperative serum alpha-fetoprotein levels, and enhanced whole body computed tomography scans. Primary complications of the embolization were fever (97%), abdominal pain (60%), and abdominal discomfort (35%). The fever was well controlled with antipyretics and steroids within 10 days. Four patients died within 1 mo of surgery due to hepatic insufficiency, but all of these patients had tumor emboli in the main segment of the portal vein. (15 Refs) (In JPN)

35. PANCREATIC CANCER.

Suzuki T
First Dept. Surgery, Kyoto Univ. Sch. Medicine, Kyoto, Japan
Nippon Rinsho; 40(1):167-174 1982

Results of resecting pancreatic cancers, intrapancreatic skip lesions, methods and results of radical total pancreatectomy, and standards for chosing the surgical technique to resect pancreatic cancers are discussed. Forty patients with pancreatic head cancer underwent surgery (17 pancreatic head resections, 23 total pancreatectomies). Two patients undergoing the surgery died within 1 mo of surgery. One-, 3-, and 5-yr survival rates of the patients who underwent pancreatic head resections and total pancreatectomies were 46.6% and 56.2%, 15.3% and 30.0%, and 8.3% and 22.2%, respectively. Serial sections of the pancreases of the patients who underwent total pancreatectomies for pancreatic head cancer indicated that skip lesions occurred in the pancreatic tail side of the pancreas in about 10% of the cases. Eight different pathological conditions were delineated as guidelines for specific surgical procedures to be followed in the treatment of pancreatic cancers. As part of the process, the determination of the condition of the primary tumor prior to surgery can be accomplished by various imaging techniques, and the determination of the status of the disease during surgery can be achieved by observation, palpation, x-ray examination, ultrasonography, biopsy, and frozen sections. The degree of lymph node involvement and infiltration of the tumor into blood vessels are also important factors to take into account. (17 Refs) (In JPN)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

36. AN APPRAISAL OF TRANSCATHETER ARTERIAL EMBOLIZATION COMBINED WITH TRANSCATHETER ARTERIAL INFUSION OF CHEMOTHERAPEUTIC AGENT FOR HEPATIC MALIGNANCIES.

Okamura J, Horikawa S, Fujiyama T, Monden M, Kambayashi J, Sikujara O, Sakurai M, Kuroda C, Nakamura H, Kosaki G
Second Dept. Surgery, Fukushima, Fukushima-ku, Osaka 553, Japan
World J Surg; 6(3):352-357 1982

Use of transcatheter arterial embolization (TAE) combined with transcatheter arterial infusion (TAI) of chemotherapeutic agents in 68 patients (63 men, 5 women; 30-79 yr old) with hepatic malignancies is reported. In cases with a hypervascular tumor and a patent portal vein, 40-60 mg of adriamycin or 10 mg of mitomycin were infused through the same catheter. Ten to 15 min later, Gelfoam particles immersed with adriamycin (10 mg) were injected into the intrahepatic branch of the hepatic artery. Occlusion was confirmed by angiography. Two to 3 wk later, the tumor mass was reexamined and hepatic lobectomy or local excision or segmental resection were performed. Of the 68 tumors, 58 were considered unresectable. Six mo and 1-yr actuarial survival rates of these 58 patients were 69.7% and 56.2%, respectively. Ten patients (8 men, 2 women; 52-69 yr old) underwent elective hepatic resection 11-60 days after TAI and TAE. Eight were hepatocellular carcinoma and two were metachronous metastatic carcinoma secondary to well-differentiated tubular adenocarcinoma of the stomach and to well-differentiated papillary adenocarcinoma of the sigmoid colon, respectively. Eight patients had liver cirrhosis. No operative mortality occurred. Right lobectomy was performed in four patients, segmentectomy in three, and subsequent segmentectomy in three. All patients were doing well 1-11 mo after surgery. Actuarial survival at 6 mo for these 10 patients was 100%. Five patients experienced complete tumor necrosis and five partial necrosis. Five experienced minimal infarct of the gallbladder, two moderate infarct, and one severe infarct. Hepatic infarct occurred in two cases. TAE plus TAI is justified for treatment of hepatic malignancies in selected cases. (11 Refs)

SELECTED CLINICAL CORRELATIONS

37. IMAGING TECHNIQUES FOR STAGING ABDOMINAL HODGKIN'S DISEASE.

Castellino RA
Div. Diagnostic Radiology, Stanford Univ. Sch. Medicine, Stanford, CA, 94305
Cancer Treat Rep; 66(4):697-700 1982

Choice of imaging techniques for staging abdominal Hodgkin's disease (HD) depends on the patterns of involvement; the sensitivity, specificity, and accuracy of the available studies; and the type of information needed. Sites frequently involved by tumor, including para-aortic, paracaval, parailiac, and splenic hilar lymph nodes, and the spleen, should be routinely evaluated. Specific sites, regardless of the incidence of disease at that site, should be studied if appropriate signs or symptoms are present. Imaging techniques specifically used for the retroperitoneal lymph nodes, other lymph node groups, the spleen, liver, and gastrointestinal and genitourinary tracts are described. Possible choices of techniques include plain film radiography such as conventional tomography and positive-contrast studies, angiography including lymphography, radionuclide studies, ultrasonography, and computerized tomography. An approach to imaging the abdomen and pelvis in newly diagnosed, previously untreated patients with HD for staging purposes is outlined. (8 Refs)

38. RESECTION OF LIVER METASTASES.

Muhe E, Gall FP, Angermann B, Adson MA
Surgical Clinic Hosp. with Policlinic, Univ. Erlangen-Nuremberg, Erlangen, W. Germany
World J Surg; 6(2):210-215 1982

Experience in resection of 49 liver metastases in 38 patients is reported. Survival rates were 25% at 3 yr, 20% at 5 yr, and 15% at 10 yr. Three patients were alive at 12, 15, and 17 yr. After local resection (30 patients) 5-yr survival rate was 21%, while there were no 5-yr survivors after hemihepatectomies (8 patients). After resection of a single metastasis (26 patients) 5-yr survival was 23%, while there were no 5-yr survivors after resection of more than one metastasis (12 patients). When liver metastases were resected at the same time as the primary (30 patients), survival rates were 56%, 24%, and 18% at 1, 5, and 10 yr, respectively. In the other eight patients there was an interval of from 7-76 mo from resection of primary to resection of metastases. In these patients the 1-yr survival rate was 40%, and there were no 2-yr survivors. In 31 patients having tumors with the liver as the primary filter for metastasis, survivals were 28%, 22%, and 17% at 3, 5, and 10 yr, respectively. In the other seven patients the lungs were the primary filtration site. None of these patients were alive at 3 yr. Thus, prognosis at resection of liver metastases is better if the metastasis is solitary, it can be removed by small local resections, the primary tumor and metastasis can be removed during the same operation, and the liver forms the first metastatic filter. (17 Refs)

39. PERCUTANEOUS INTRAHEPATIC CHEMOTHERAPY VIA INDWELLING PORTAL VEIN CATHETER AND SUBCUTANEOUS INJECTION RESERVOIR.

Hardy TG, Hartmann RF, Samson RB, Stewart WR, Aguilar PS
Central Ohio Colon and Rectal Center, 300 East Town St., Columbus, OH, 43215
Dis Colon Rectum; 25(4):292-296 1982

Experience with a subcutaneous injection reservoir in patients receiving intrahepatic chemotherapy for metastatic adenocarcinoma to the liver from the colon and rectum is presented. Details of technique are described. It is postulated that the implantable subcutaneous reservoir adds considerably to the quality of life of these patients. (Author abstract) (7 Refs)

REHABILITATION ASPECTS

40. FEEDING GASTROSTOMY. A REAPPRAISAL.

Wilkinson WA, Pickleman J
(c/o Pickleman) Dept. Surgery, Loyola Univ. Medical Center, 2160 South First Ave., Maywood, IL, 60153
Am Surg; 48(6):273-275 1982

A retrospective review of 67 patients undergoing feeding gastrostomy for nutritional support over a 10-yr period disclosed a 30 day mortality rate of 30% following this procedure. Patients with head and neck carcinoma and those patients who were not in coma at the time of the procedure enjoyed extended and useful long-term survival. Patients who were in coma at the time of the procedure had similar mortality rates, but no patient ever regained consciousness afterward despite survival times of over 1 yr. It is our conclusion that feeding gastrostomy in comatose patients is a questionable procedure and one which is unlikely to benefit the patient. It would appear that the only present day rationale for the performance of a feeding gastrostomy in comatose patients lies in the facilitation of their nursing care and their transfer to a chronic care facility. (Author abstract) (2 Refs)

41. SUBSTITUTE ESOPHAGUS.

Harder F, Herkert F
Departement fur Chirurgie, Kantonsspital Basel, CH-4031 Basel, Switzerland
Z Gastroenterol; (Special17):99-104 1982

Indications for total or partial resection of the esophagus and substitution by other organs include strictures, achalasia, esophageal carcinoma, and esophageal injury. Right thoracotomy and covered thoracotomy are the preferred approaches. The stomach is the best replacement for the esophagus. Other usable structures include the colon, jejunum, and skin. An artificial prosthesis may be used in inoperable cases. Indications, advantages, and limitations of various techniques are discussed. (29 Refs) (In GER)

42. THE ROLE OF ENTERAL AND PARENTERAL NUTRITION IN CANCER THERAPY.

Merkle NM
Abt. Allg. Chirurgie, Dept. fur Chirurgie, Universitat Ulm, Steinhovelstrasse 9, Postfach 38 80, D-7900 Ulm, W. Germany
Fortschr Med; 100(13):566-570 1982

Nutritional support in cancer therapy is discussed. Patients undergoing cancer therapy are frequently malnourished as a result of anorexia, abnormal taste sensations, pain, gastrointestinal obstruction, or unknown causes. Surgery, radiotherapy, and chemotherapy may impair the body's capacity to absorb or utilize food. Studies indicate that special enteral or parenteral nutritional support may provide both physical and psychological improvement in patient condition. No adverse effects of nutritional support have been reported. (no Refs) (In GER)

43. PALLIATIVE TREATMENT OF CARCINOMA OF THE HEPATIC DUCT JUNCTION. INTRA-HEPATIC DERIVATION OR TRANS-TUMORAL INTUBATION?.

Huguet C, Nordlinger B, Ibanez L, Hakami F, Parc R, Loygue J
Centre de Chirurgie Digestive, Hopital Saint-Antoine, 184 rue du Faubourg Saint-Antoine, F 75012 Paris, France
Nouv Presse Med; 11(19):1467-1470 1982

Intra-hepatic cholangiojejunostomy (Group I patients) and simple trans-tumoral intubation (Group II patients) were retrospectively compared in a series of 44 patients with primary carcinoma of the hepatic duct junction. Hospital mortality was 30% in the 13 Group I patients and 9.5% in the 21 Group II patients. Jaundice and pruritus were equally relieved in both groups. The mean survival time (hospital deaths excluded) was 16 months in Group I and 12 months in Group II patients. It is concluded that the decision as to which of these two palliative surgical procedures should be performed must rest on the degree of biliary duct distension as well as on the patient's age and general condition. (Author abstract) (10 Refs) (In FRE)

44. PERCUTANEOUS TRANSHEPATIC DRAINAGE IN OBSTRUCTIVE JAUNDICE: ADVANTAGES AND PROBLEMS.

McPherson GA, Benjamin IS, Habib NA, Bowley NB, Blumgart LH
(c/o Blumgart) Royal Postgraduate Medical Sch., Hammersmith Hosp., Du Cane Road, London W12 0HS, England
Br J Surg; 69(5):261-264 1982

This study is a critical prospective assessment of 37 patients with obstructive jaundice, treated by percutaneous transhepatic biliary drainage. The median duration of drainage was 18 days (range 44-56), and during this period clearance of bilirubin and improvement in creatinine clearance were obtained. Only 10 patients gained wt. Three patients required early laparotomy. Thirty-three patients underwent definitive surgery. Of these, 8 died without leaving hospital. The incidence of infection rose during drainage, and infected bile was clinically significant. Two deaths were associated with infection, arising in the drainage system, producing intrahepatic abscesses around the drain track. While the evidence for a staged approach in the severely ill patient with obstructive jaundice is substantial, the procedure of percutaneous transhepatic tubal drainage carries significant hazards, under-emphasized in previous reports. Further controlled assessment is required before this technique is accepted as the initial best option for decompression of the obstructed biliary tract. (Author abstract) (22 Refs)

45. NONSURGICAL INTUBATION OF NEOPLASTIC STRICTURES OF THE COMMON BILE DUCT.

Cremer M, Adler M, Dunham F, De Toeuf J, Ansay J, Lambilliotte JP
Service Medico-chirurgical de Gastro-enterologie, Hopital Erasme, Universite Libre de Bruxelles, Brussels, Belgium
Rev Med Brux; 3(4):269-271 1982

Nonsurgical intubation of neoplastic stenosis of the common bile duct is intended to bring about presurgical drainage or to provide definitive palliative treatment. In 8/44 cases of either primary pancreatic cancer or local recurrence, biliary drainage was used presurgically; in 36/44 cases, the technique was used palliatively. In more than 9 cases out of 10, intubation was possible either through endoscopy or a transhepatic approach. (11 Refs) (In FRE)

46. INTRAHEPATIC ABSCESS AS A COMPLICATION OF LONG-TERM PERCUTANEOUS INTERNAL BILIARY DRAINAGE.

Pennington L, Kaufman S, Cameron JL
(c/o Cameron) Blalock 688, Dept. Surgery, Johns Hopkins Hosp., Baltimore, MD, 21205
Surgery; 91(6):642-645 1982

One hundred five patients with obstructive jaundice have undergone percutaneous transhepatic internal biliary drainage at the Johns Hopkins Hospital. Many of these patients subsequently underwent corrective or palliative surgery, whereas others died of malignant disease after relatively short periods of catheter decompression. Seven of these patients with percutaneous internal biliary drainage, however, have been followed for over 8 mo. Three of these seven patients developed intrahepatic abscesses at a mean of 16 mo after catheter placement. Two of the three patients died of sepsis. In two of the patients the abscesses communicated with the biliary tree, in the third it did not. Intrahepatic abscess formation may be a common complication of long-term percutaneous transhepatic internal biliary drainage, and it should be suspected in any patient with fever or signs of sepsis who has been followed with catheter drainage for over 6 mo. (Author abstract) (6 Refs)

47. NONSURGICAL DRAINAGE OF THE BILE DUCT. SUMMARY OF A PANEL DISCUSSION BETWEEN F. BURCHARTH (COPENHAGEN), F. HAGENMULLER (FRANKFURT) AND D. WURBS (HAMBURG).

Hagenmuller F
Abteilung fur Gastroenterologie, Klinikum der Johann-Wolfgang-Goethe-Universitat, Theodor-Stern-Kai 7, D-6000 Frankfurt a.M. 70, W. Germany
Internist (Berlin); 23(5):269-272 1982

Results obtained by nonsurgical bile drainage are presented. Nonsurgical bile drainage was technically successful in 41/48 patients with malignant bile duct obstructions. A median survival of 170 days was achieved in 13/34 patients with malignant bile duct obstructions by endoscopic transpapillary insertion of bile duct prostheses. It was possible to eliminate jaundice by percutaneous implantation of bile duct endoprosthesis in 72/110 patients with obstructions due to malignant tumors. (19 Refs) (In GER)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

48. LEWIS BLOOD-TYPE MAY AFFECT THE INCIDENCE OF GASTROINTESTINAL CANCER.

Koprowski H, Blaszczyk M, Steplewski Z, Brockhaus M, Magnani J, Ginsburg V
Wistar Inst., 36th St. at Spruce, Philadelphia, PA, 19104
Lancet; 1(8285):1332-1333 1982

The frequency of gastrointestinal cancer antigen (GICA) was studied in the sera of 315 patients with gastrointestinal cancer (GIC), of 89 patients with other malignancies, and of 108 healthy subjects, and on tumor cells from some of the GIC patients. Sera of 64% of the patients with clinically and histologically proven colorectal cancer, 92% of patients with pancreatic cancer, and 72% of patients with gastric cancer inhibited binding of anti-GICA monoclonal antibody to GICA-containing cancer cells. Sera of 8% of patients with malignancies other than GIC and 2% of healthy subjects inhibited binding. Among the eight patients with tumors other than GIC whose sera inhibited binding of the antibody, three had liver carcinoma. GICA was expressed in 55% of the colorectal cancer tissue samples, in 82% of pancreatic cancer tissues, and in 100% of gastric cancer tissues. Cells of 1/8 liver carcinomas and 1/5 gallbladder carcinomas were positive for GICA. The relationship of Lewis blood type to GIC and GICA expression is discussed. (14 Refs)

49. PRIMARY BILIARY CIRRHOSIS: AN INCREASED INCIDENCE OF EXTRAHEPATIC MALIGNANCIES?

Mills PR, Boyle P, Quigley EM, Birnie GG, Jarrett F, Watkinson G, MacSween RN
Gastroenterology Unit, Royal Infirmary, Glasgow G4 OSF, Scotland
J Clin Pathol; 35(5):541-543 1982

In a retrospective review of 85 patients with primary biliary cirrhosis (PBC), 10(11.8%) were noted to have extrahepatic malignant neoplasm. In seven female patients the tumor developed within a mean of 3.5 yr after the clinical onset of PBC. This observed number of tumors, 3.5x more common than the expected age-adjusted incidence, was statistically significant at the 0.5% level. (Author abstract) (13 Refs)

50. POSSIBLE ETIOLOGICAL FACTORS IN THE DEVELOPMENT OF ESOPHAGEAL CANCER.

Horvath O, Csikos M, Petri I, Petri A, Szontagh E, Imre J
I. Sebeszeti Klinika, Szegedi Orvostudomanyi Egyetem, Szeged, Hungary
Orv Hetil; 123(16):971-976 1982

Possible etiological factors of esophageal carcinoma were studied in 385 patients. Regular alcohol consumption was determined in 56.4% of all patients. The corresponding percentage was 70% in another group of 100 patients with esophageal carcinoma, and the daily alcohol consumption of 35/100 patients exceeded 150 g. Past gastric resections were performed in 20/385 patients. The av interval between resection and the manifestation of esophageal carcinoma was 14 yr. Achalasia lasting 15-21 yr before the development of esophageal carcinoma was diagnosed in 5 patients. Stricture of the esophagus was present in 34/385 cases. Severe respiratory tract infections were found in the anamnestic data of nearly two thirds of all patients, pulmonary tuberculosis in 16/385. Eight-one of the 100 patients of the second group were found to be smokers. Second tumors were found in 11/385 patients. They included sublingual gingival and laryngeal tumors in two patients each, gastric tumors in three, prostate and renal tumors in one each. Undernutrition, vitamin deficit, reflux esophagitis and inadequate oral hygiene are also possible etiological factors of esophageal carcinoma. (56 Refs) (In HUN)

51. HEPATOCELLULAR CARCINOMA IN AN URBANISED BLACK COMMUNITY. A CHANGING PATTERN.

Paterson AC, Isaacson C
Dept. Pathology, Baragwanath Hosp., Sch. Pathology South African Inst. Medical Res., Johannesburg 2000, South Africa
Virchows Arch [Pathol Anat]; 395(3):273-278 1982

Hepatocellular carcinoma has been extensively studied in Southern Africa, and particularly its relationship to hepatitis B virus infection. Most of this work involved rural black populations. In this study the impact of urbanization on this relationship is investigated. The material is derived from the laboratory records at Baragwanath Hospital which serves the Black urban community of Soweto. Cases autopsied during the periods 1956-1960 and 1976-1980 have been examined with regard to age, sex, underlying cirrhosis and presence of HBsAg in the non-tumor liver. In addition, all biopsies from 1955 to 1980 have been analyzed with respect to age and sex. There is evidence of a significant increase in overall av age and in the proportion of female cases, while the percentage of HBsAg positive cases has fallen. Possible causes for these findings are considered. (Author abstract) (34 Refs)

52. EVIDENCE THAT HEPATITIS B VIRUS HAS A ROLE IN LIVER-CELL CARCINOMA IN ALCOHOLIC LIVER DISEASE.

Brechot C, Nalpas B, Courouce AM, Duhamel G, Callard P, Carnot F, Tiollais P, Berthelot P
Unite de Recombinaison et Expression Genetique, Institut Pasteur, 28 rue du Docteur Roux, 75015 Paris, France
N Engl J Med; 306(23):1384-1387 1982

Determinations of hepatitis B virus (HBV) DNA were made in a prospective study of 51 alcoholics without hepatocellular carcinoma (HCC) and in a retrospective study of 20 alcoholics with both alcoholic cirrhosis and HCC. The overall prevalence of HBV serologic markers was 37% in the first group, compared with 10% in a nonselected blood-donor population. HBV DNA was detected in liver samples from three hepatitis B surface antigen (HBsAg)-positive patients from the first group and in liver samples of five other patients from this group in whom serum HBsAg was not detectable. In the second group, HBV DNA was detected in the neoplastic portion of the autopsied liver in all patients. Integration of viral DNA into the hepatocellular DNA was demonstrated in the samples from the second group, but conclusively in only two samples from the first group. HBV DNA was not detected in the livers of 14/16 patients with alcoholic liver disease (from the first group) who were negative for HBsAg but positive for anti-hepatitis B core antigen or anti-HBsAG, suggesting that HBV is probably not involved in progression of the liver disease. The presence of HBV DNA in livers of alcoholic patients without HCC may delineate the population at high risk for development of this disease. (25 Refs)

53. HEPATITIS B AND PREVENTION OF HEPATOCELLULAR CARCINOMA.

Blumberg BS
Inst. for Cancer Res., Fox Chase Cancer Center, 7701 Burholme Ave., Philadelphia, PA, 19111
Nouv Presse Med; 11(12):903-905 1982

The role of a hepatitis B virus (HBV) vaccine in the prevention of hepatocellular carcinoma (HCC) is discussed. Production of the HBV vaccine, the relationship between HBV and HCC, and viruses similar to HBV are considered. Geographic regions with a high incidence of HBV surface antigen coincide with areas of high HCC incidence. Infection with HBV is most common among patients presenting with HCC compared to appropriate controls. (no Refs) (In FRE)

54. OF WOODCHUCKS AND MEN: THE CONTINUING STORY OF HEPATITIS B AND HEPATOCELLULAR CARCINOMA.

Johnson PJ, Williams R
Liver Unit, King's Coll. Hosp. Medical Sch., London SE5 8RX, England
Br Med J; 284(6329):1586-1588 1982

Statistical evidence that presence of hepatitis B surface antigen (HBsAg) is associated with high rates of hepatocellular carcinoma is presented. Studies on the relationship between HBsAg and cirrhosis lead to the hypothesis that in susceptible people the hepatitis B virus causes either a healthy carrier state or chronic liver disease depending on the host's immunological reaction to the virus. After many years the virus becomes part of the host genetic material, and in some cases this may lead to malignant change. Potential uses of vaccines against hepatitis B virus or antiviral chemotherapy in carriers are discussed. (22 Refs)

55. CHRONIC HEPATITIS AND HEPATOCELLULAR CARCINOMA ASSOCIATED WITH WOODCHUCK HEPATITIS VIRUS.

Snyder RL, Tyler G, Summers J
Penrose Res. Lab., Zoological Society of Philadelphia, Philadelphia, PA
Am J Pathol; 107(3):422-425 1982

The relationship between chronic hepatitis (CH), woodchuck hepatitis virus (WHV), and hepatocellular carcinoma (HCC) was examined. Postmortem study of 1,007 woodchucks killed by hunters revealed 4 animals with HCC and 336 with mild to severe hepatitis. Experimental infections were produced in five animals. The histopathology of woodchuck hepatitis is described and compared with that of human hepatitis B infection. Incidence of HCC in woodchucks with CH and WHV is discussed. (14 Refs)

56. HEPATITIS-B VIRUS INFECTION IN BLACK CHILDREN WITH HEPATOCELLULAR CARCINOMA.

Kew MC, Hodkinson J, Paterson AC, Song E
Dept. Medicine, Witwatersrand Univ. Medical Sch., Hospital Hill, Johannesburg 2001, South Africa
J Med Virol; 9(3):201-207 1982

Six unselected South African black children (2 female, 15 and 16 yr old; 4 male, 10-13 yr old) with hepatocellular carcinoma (HCC) were examined for hepatitis-B virus (HBV) infection. Characteristics of the tumors were similar to those in black adults. All of the patients were positive for hepatitis B surface (HBs) antigen and hepatitis B core antigen in the serum. Hepatitis Be antigen was present in four patients; sera from the two patients without e antigen (1 male, 1 female) were positive for e antibody. All of the sera were negative for HBs antigen. Taken in conjunction with the HBV status of black adults in South Africa, the findings suggest the possibility that nearly all black patients with HCC are or have been infected with HBV. If HBV is oncogenic, tumor formation may occur within 10 yr of the initial infection. (14 Refs)

57. ANALYSIS OF CASES OF HEPATIC CELL CARCINOMA THAT TRANSFORMED FROM VIRAL HEPATITIS.

Ichida F, Honma A, Soga K

Third Dept. Internal Medicine, Niigata Univ. Sch. Medicine, Niigata, Japan

Nippon Rinsho; 40(2):468-477 1982

World epidemiological surveys and molecular biology research on the relationship between hepatitis B virus (HBV) and liver cancer are discussed, and cases of hepatitis and hepatic cirrhosis which transformed into hepatic cancer in Japanese patients are analyzed. Various epidemiological and molecular biology studies show a clear correlation between HBV and hepatic cell carcinoma. Patients with B-type hepatitis, cirrhosis, or hepatic cancer were significantly younger than those with non-B type hepatitis, cirrhosis, or hepatic cancer, respectively. Approx 70% of 110 cases of hepatic cancer were found to have positive laboratory findings related to HBV. The patients who had chronic liver disease and who were positive for hepatitis Bs (HBs) antigen were thought to be at high risk for developing hepatic cancer. No direct relationship was observed between alpha-fetoprotein (AFP) levels and serum HBs antigens, however, monitoring levels of AFP was thought to be an important method to help detect early stage liver cancer. (33 Refs) (In JPN)

58. HEPATOCELLULAR CANCER IN SWEDEN: INCIDENCE 1961-1962 AND 1971-1972.

Axelsson G

Dept. Environmental Hygiene, Univ. Gothenburg, Box 33031, S-400 33 Gothenburg, Sweden

J Chronic Dis; 35(6):459-466 1982

The present study was undertaken to compare the incidence of hepatocellular cancer in Sweden during 1961-1962 and 1971-1972, and to evaluate the geographical distribution of the disease. Another aim was to determine whether a retrospective analysis of hospital records of individual cases could provide information on relevant risk factors, in particular cirrhosis, previous diseases, occupational exposure and alcohol consumption. The incidence of hepatocellular cancer in Sweden has increased, particularly in the highest age groups. A difference in incidence for males between the three largest cities in Sweden and the remainder of the country is demonstrated. The proportion of autopsies in Sweden, particularly in the highest age groups, has increased between the two time periods, which could explain part of the increase in incidence. Information from the hospital records indicate that cirrhosis and alcohol abuse among the male cases in the three largest cities are more common than in the remainder of Sweden. (Author abstract) (15 Refs)

59. SILICA FRAGMENTS FROM MILLET BRAN IN MUCOSA SURROUNDING OESOPHAGEAL TUMOURS IN PATIENTS IN NORTHERN CHINA.

O'Neill CH, Clarke G, Hodges G, Jordan P, Newman R, Pan QQ, Liu FS, Ge M, Chang YM, Toulson E
Imperial Cancer Res. Fund Lab., P.O. Box 123, Lincoln's Inn Fields, London WC2A 3PX, England
Lancet; 1(8283):1202-1206 1982

Millet bran is a component of the diet in the area of highest esophageal cancer incidence in northern China. Millet bran was found to contain up to 20% by wt of silica; some of this silica occurs as friable sheets or sharply-pointed fibers. These types of silica in millet bran are the most likely source of an unusual contamination with fragments of silica found in the esophageal mucosa surrounding tumors in patients in northern China. A group of mucosal samples analyzed together contained over 5,000 particles/g (100 ppm by wt), 10x as many as were found in tissue from normal controls taken at necropsy in London. The modal diameter was 10 um (1-70 um). The particles were in the body of the mucosa and were not simply a surface contaminant. Silica fragments and fibers of similar size originating from other plant species occur in the diet in the two other regions of greatest incidence of esophageal cancer, the Transkei and Iran. If such fragments enter the mucosa, they must cause some degree of trauma, and they may also be able to stimulate proliferation by providing anchorage. These findings suggest the possibility that silica particles might be involved in the etiology of esophageal cancer. (Author abstract) (16 Refs)

60. EPIDEMIOLOGICAL FINDINGS ON ESOPHAGEAL CANCER IN THE VENETO REGION.

Rossi M, Ancona E, Mastrangelo G, Solimbergo D, Paruzzolo P, Azzarini G, Sorrentio P, Peracchia A
Clinica Chirurgica III, Universita di Padova, Padova, Italy
Minerva Med; 73(22):1531-1540 1982

A study of 150 patients (125 men, 25 women, 40-71 yr old, av age 57.9 yr) with esophageal cancer and 150 control individuals (125 men, 25 women) is reported. Based on their daily and total consumption of tobacco, alcohol and corn flour the patients were categorized into relative risk groups. It was found that a daily alcohol consumption of 81 g/day or higher and a corn flour consumption in excess of 36 g/day significantly increased the relative risk factor (Rf). Tobacco use had no significant influence on the Rf. Combinations of more than one risk factor (alcohol, tobacco, corn flour) did not have a synergetic but a merely additive effect. Alcohol use was directly correlated to the incidence of esophageal cancer in 11.64% of cases, and corn flour use was correlated to cancer etiology in 3.96% of the patients. However no significant correlation could be established in 84.4% of the cases and causative factors remained unknown. It is suggested that other risk factors may have been related to general nutrition and vitamin and mineral intake. (44 Refs) (In ITA)

61. EPIDEMIOLOGY OF HEPATIC, GALL BLADDER, AND PANCREATIC CANCER IN JAPANESE.

Aoki K, Sasaki R
Dept. Preventive Medicine, Nagoya Univ. Sch. Medicine, Nagoya, Japan
Nippon Rinsho; 40(1):8-14 1982

Factors affecting the occurrence of hepatic, gall bladder, and pancreatic cancer were studied epidemiologically using death statistics. Of the three types of cancer, the age-adjusted death rate for both men and women between 1950-1978 was highest for hepatic cancer. The death rate for hepatic cancer between 1960-1975, was fairly steady for men, and was decreasing for women. There was a slight creeping up of rate between 1975-1978 in both men and women. The rates of death due to pancreatic or choledochal cancer showed an increase in both groups. According to birth cohorts, little change in death rates due to cancer were observed in the men born between 1890-1930. The death rates have decreased for the birth cohorts of women born since 1900. Deaths due to choledochal cancer increased for both men and women between 1969-1978. Higher rates of hepatic cancer were observed in both men and women living in Kyushu and Yamagata Prefecture, in men living in Hiroshima and Osaka, and in women living in Tokushima. Death rates due to pancreatic cancer were high in Hokkaido and Aomori Prefecture. Although none of the three organs has direct contact with the outside environment, there is an increase in environmental carcinogenic factors. It was of interest that latent or complicated infections were observed frequently associated with the cancers. (43 Refs) (In JPN)

62. DETECTION OF MUTAGENIC ACTIVITY IN HUMAN URINE FOLLOWING FRIED PORK OR BACON MEALS.

Baker R, Arlauskas A, Bonin A, Angus D
Commonwealth Inst. Health, Univ. Sydney, Sydney, New South Wales 2307, Australia
Cancer Lett; 16(1):81-89 1982

The mutagenic activity of urine from nonsmoking individuals following meals of fried pork and bacon was tested in the Salmonella typhimurium revertant assay. The greatest degree of mutagenicity was observed in urine collected 2-4 hr after ingesting the fried test foods. Evidence of mutagenic activity continued for up to 24 hr. In contrast, ingestion of microwave prepared pork products failed to produce urinary mutagens. Urine mutagenicity was unrelated to histidine concentration in urine because of the requirement for S9. Beta-glucuronidase did not enhance the activity of urine mutagens either when incorporated together with urine extracts in agar overlays, when preincubated with urine extract, or with various whole urine specimens. Mutagenicity was acetone extractable from fried but not from microwave-prepared or raw pork, and was associated with the basic fraction rather than the acidic plus neutral fraction. Activity was best detected in strains TA1538 and TA98. Liver S9 was required to detect mutagenicity in these meat extracts. Mutagenic extracts also increased the frequency of sex-linked recessive mutations in Drosophila melanogaster. (19 Refs)

63. A CASE-CONTROL DIETARY STUDY OF PRIMARY LIVER CANCER RISK FROM AFLATOXIN EXPOSURE.

Bulatao-Jayme J, Almero EM, Castro CA, Jardeleza TR, Salamat LA
Food and Nutrition Res. Inst., PO Box EA 467, Ermita, Manila 2801, Philippines
Int J Epidemiol; 11(2):112-119 1982

The dietary intakes of 90 confirmed primary liver cancer cases were compared against 90 age-sex matched controls. Dietary recall, obtained by the same nutritionist, was taken for each change of residence lasting 1 yr or more. The frequency and amounts of food items consumed were calculated into units of aflatoxin load per day using a Philippine table of aflatoxin values of these items. Of the total subjects' aflatoxin load, 51.2% came from cassava, 20.3% from corn, 6.8% from peanuts and 5.8% from sweet potato. The mean aflatoxin load per day of the cases as found to be 440% that of the controls. Upon grouping dietary aflatoxin loads (and alcohol intakes) into Heavy and Light, and upon comparing cases versus controls, the relative risk (RR) of developing primary liver cancer was found to be statistically significant in the following order of rank: cassava, peanuts, sweet potato, corn and alcohol. Boiled rice which had negligence aflatoxin content gave no difference in risk. Combining aflatoxin load and alcohol intake gave a synergistic and a statistically significant effect on RR with Light Aflatoxin, Light Alcohol as RR = 1. Results: Light Aflatoxin, Heavy Alcohol RR = 3.9; Heavy Aflatoxin, Light Alcohol RR = 17.5; Heavy Aflatoxin, Heavy Alcohol RR = 35.0. (Author abstract) (25 Refs)

64. CANCER MORTALITY EXCESS.

Neuberger JS, Hollowell JG

Dept. Community Health, Univ. Kansas Sch. Medicine, Kansas City, KS

J Kans Med Soc; 83(5):244-248 1982

Cancer mortality by site and county in Kansas for the period 1973-1977 is reported. Data were restricted to white male and female residents of Kansas. Counties with elevated rates for 1950-1969 were compared with results for 1973-1977 to see if they remained consistently high for the same type of cancers. The only consistently high statistically significant mortality rates found in Kansas during both time periods were for lung cancer in white males in Cherokee and Wyandotte counties. Lung cancer mortality rates rose more rapidly than expected in females in Cherokee County to the point where lung cancer is presently comparable to breast cancer as the leading cause of female cancer mortality. Cancer sites which have increased in 1973-1977 to become statistically significantly elevated are male kidney cancer in Butler county, male bladder cancer in Shawnee county, and pancreatic cancer in Atchison county, (previously were not included). No significant excesses were found for females. Instability in rates due to small sample size were recognized as possible reasons for some of the calculated cancer mortality excess observed. (7 Refs)

65. RELATIONSHIP OF SITE-SPECIFIC CANCER MORTALITY RATES TO ALTITUDE.

Amsel J, Waterbor JW, Oler J, Rosenwaike I, Marshall K

Sch. Medicine, Program Epidemiologic Res. and Training, Univ. Pennsylvania, Nursing Education Building, 420 Service Drive S2, Philadelphia, PA, 19104

Carcinogenesis; 3(5):461-465 1982

Mortality rates for all malignant neoplasms (combined) and for 34 site-specific cancer categories for selected high and low altitude populations are compared using two related techniques: confidence interval overlap for strictly descriptive purposes and analysis of standardized mortality ratios using lower and upper 95% statistical significance factors for the ratio of an observed value of a poisson variable to its expectation. Techniques are employed to minimize confounding due to industrialization, urbanization or selected cultural characteristics. Cancer mortality data for US counties averaged over the 20-yr period, 1950-1969, were used. For most comparisons a deficit in cancer mortality in high altitude counties was observed. The largest differences between the low and high altitude groups were found for cancers of the tongue and mouth, esophagus, larynx, lung and melanoma. Some limitations of ecologic studies are discussed. (Author abstract) (18 Refs)

66. DATA ON THE CARCINOGENICITY OF VINYL CHLORIDE.

Byczkowska Z
Klinika Chorob Zawodowych, Instytut Medycyny Pracy w Przemysle Weglowym i Hutniczym, ul. Bieruta 20, 41-200 Sosnowiec, Poland
Pol Tyg Lek; 37(3):95-97 1982

The case of a patient who developed solid hepatic adenocarcinoma after intermittent exposure to vinyl chloride (VC) for 17 yr is reported, and literature on the carcinogenicity of VC is reviewed. Hepatic angiosarcoma is considered a typical tumor developed from the exposure to VC. Other tumors, such as hepatoma, nephroblastoma, adenosarcoma, adenocarcinoma, epidermoid carcinoma, and fibroangioma were also observed in humans or experimental animals following exposure to VC. (35 Refs) (In POL)

SELECTED PRE-CLINICAL STUDIES

67. MECHANISM OF ESOPHAGEAL TUMOR INDUCTION IN RATS BY N-NITROSOMETHYLBENZYLAMINE AND ITS RING-METHYLATED ANALOG N-NITROSOMETHYL(4-METHYLBENZYL)AMINE.

Hodgson RM, Schweinsberg F, Wiessler M, Kleihues P
(c/o Kleihues), Pathologisches Institut, Albertstrasse 19, 78 Freiburg, W. Germany
Cancer Res; 42(7):2836-2840 1982

The metabolism of the esophageal carcinogen N-nitrosomethylamine (MBN) and its ring-methylated analog N-nitrosomethyl(4-methylbenzyl)amine (4-MeMBN) was investigated in male Wistar rats. When given in drinking water, both compounds have been shown to induce a high incidence of esophageal carcinomas but, after systemic administration of equimolar doses, 4-MeMBN is considerably less toxic and carcinogenic than in MBN. The data indicate that the lower toxicity and carcinogenicity of 4-MeMBN after systemic administration are due to the rapid formation (mainly in the liver) and excretion via the urine of its benzoic acid derivative. The strong carcinogenic effect of po 4-MeMBN can be explained by direct uptake from the drinking water into the esophageal mucosa. Following a single iv injection of [methylene-14C]MBN and 4-Me[methylene-14C]MBN, no benzylated bases were detectable in rat tissues. This indicates that the bioactivation of these compounds is initiated predominantly by hydroxylation at the methylene bridge leading to a methylating rather than a benzylating intermediate as the ultimate carcinogen. (14 Refs)

68. INFLUENCE OF ORAL SUPPLEMENTATION OF ASCORBATE UPON THE INDUCTION OF N-METHYL-N'-NITRO-N-NITROSOGUANIDINE.

Kawasaki H, Morishige F, Tanaka H, Kimoto E
(c/o Kimoto) Dept. Chemistry, Faculty Science, Fukuoka Univ., 11 Nanakuma, Nishi-ku, Fukuoka 814, Japan
Cancer Lett; 16(1):57-63 1982

The influence of oral supplementation of ascorbic acid (AA) upon the induction of N-methyl-N'-nitro-N-nitrosoguanidine (MNNG) gastric cancer was investigated in young male Wistar rats. When MNNG-initiated rats (167 ug/ml in the drinking water) were fed a diet containing a daily dose of 0.4 g sodium ascorbate (AA), no significant tumor inhibition was observed, although AA supplementation reduced the grade of the lesion to some extent. When AA supplementation was not begun until 210 days after MNNG, at a time when adenomatous hyperplasia of the stomach epithelium was evident, again, no significant tumor inhibition was observed. AA supplementation in these animals did result in a significant reduction in the grade of the gastric lesions produced, however. Though adenocarcinoma cells seemed to be induced in AA supplemented animals, their downward massive growth, as occurred in animals not supplemented with AA, was inhibited by a heavy proliferation of connective tissue fibers surrounding them. Tumor masses were thus effectively encapsulated by connective tissue in AA supplemented animals. (14 Refs)

69. BIOCHEMICAL AND HISTOPATHOLOGICAL RESPONSE TO CHRYSOTILE INGESTION IN GUINEA PIGS.

Saxena KC, Srivastava L, Dogra RK
Industrial Toxicology Res. Centre, Mahatma Gandhi Marg, Post Office Box 80, Lucknow 226001, India
Ind Health; 20(1):19-25 1982

The biochemical and histopathological changes induced by ingested asbestos (chrysotile dust, 500 mg) were studied in guinea pigs over a period of 24 hr. A significant increase in the volume of gastric juice, free and total acidity, and peptic activity associated with a decrease in the mucin content of gastric juice, after chrysotile ingestion, indicates that these changes may be related to the dissolution and/or disposal of chrysotile dust in the stomach. Most changes occurred at 12 hr, the period of maximal dissolution of chrysotile dust as evidenced by the leaching of nickel. A rise in ATPase activity of the gastric mucosa also occurred at 12 and 24 hr. Damage to the mucosal cells was evident histopathologically 12 hr after chrysolite ingestion, and was probably due to the injury (erosion or penetration) caused by the asbestos fiber in the gastric mucosa. Restoration and reversal of changes in volume, free acidity, gastric juice mucin content, and gastric mucosal injury occurred at 24 hr. Apparently this occurred because most of the chrysotile had been expelled from the stomach. The role of gastric juice acidity and nickel dissolution in the production of gastric ulceration and carcinoma from ingested chrysotile were discussed. (22 Refs)

70. CARCINOGENESIS AFTER EXPERIMENTAL VAGOTOMY: A LONG-TERM STUDY IN ANIMALS.

Stegemann B
Chir. Klinik, Allgemeines Krankenhaus fur die Stadt Hagen, Buscheystrasse 15a, D-5800 Hagen, W. Germany
Fortschr Med; 100(13):586-591 1982

Possible carcinogenesis after nonresective gastric surgery was studied. Long-term observations were made of 560 female Wistar rats following surgery. Surgical procedures included truncal vagotomy (TV) with or without pyloroplasty (PP), selective proximal vagotomy (SPV) with or without PP, PP alone, severance of the left gastric artery, TV + PP with duodenogastrostomy in the papillary region (DGP), DGP without TV + PP, TV with resection of the antrum, and control sham operations. Half of all animals received the carcinogen N-methyl-N'-nitro-N-nitrosoguanidine (MNNG: 1.48 g/animal) in drinking water for 7 mo beginning 7 wk after surgery; MNNG provided for a comparison of animals with or without exposure to a carcinogenic compound. Overall survival rate was 65.5%; after 390 +-7 days 367 rats were evaluated. Carcinomas were found in 6% of rats that underwent TV + PP wihout MNNG and 8% of rats that underwent SPV + PP without MNNG. Carcinomas were also found in rats that underwent TV + PP with DGP or DGP alone. Cancers developed only at a pH greater than 4 (normal pH was 2-3). Morphological changes noted in test animals included atrophy of the gastric mucosa, achlorhydria, ulceration, and, after drainage surgery, duodenogastric reflux. Results suggest that vagotomy in humans, particularly with drainage procedures, carries a risk of carcinogenesis Careful postoperative surveillance is therefore required for patients undergoing nonresective gastric surgery. (28 Refs) (In GER)

71. MECHANISMS OF MACROPHAGE-MEDIATED TUMOR CYTOLYSIS.

Key ME, Hoyer L, Bucana C, Hanna MG, Henkart P, Goldfarb R, Herberman R, Zagury D, Berke M
Cancer Metastasis and Treatment Lab., NCI-Frederick, Cancer Res. Facility, Frederick, MD, 21701
Adv Exp Med Biol; 146(82):265-310 1982

Mechanisms of macrophage-mediated cytotoxicity against two very different kinds of tumors, the T1699 mammary adenocarcinoma of DBA/2 mice and the L10 hepatocarcinoma of strain 2 guinea pigs are reviewed. In both of these systems, tumor regression can occur in vivo; T1699 tumor often undergoes spontaneous regression, while the L10 tumor can be induced to regress following immune stimulation of tumor-bearing animals. Macrophages contained within T1699 tumors can kill tumor cells by both intracellular and extracellular processes, whereas macrophages from guinea pigs immunotherapeutically cured of L10 tumors kill exclusively by extracellular means. Similarities between the antimicrobial and antitumor properties of macrophages are discussed. Interactions of PM and L10 tumor cells were examined in vitro by electron microscopy and a marked increase in the binding to tumor cells of macrophage obtained from BCG-treated guinea pigs compared to those obtained from normal guinea pigs were observed. A major difference between the macrophage-tumor cell interactions of BCG-tumor-cured and normal guinea pigs is the presence of electron-dense bodies in the intercellular space between L10 cells and macrophage from BCG-tumor-cured animals. In the two tumor systems studied target cell-to-effector cell contact preceded the cytotoxic event, lysosomes within macrophages were polarized toward tumor cells, and macrophages spread over tumor cell surfaces and then destroyed the tumor cell indicating that the subcellular mechanism is the same despite the apparently different methods of killing. (80 Refs)

72. ANTIGENIC HETEROGENEITY OF THE GUINEA PIG LINE 10 HEPATOCARCINOMA. IMPLICATIONS FOR ACTIVE SPECIFIC IMMUNOTHERAPY.

Key ME, Hanna MG
Cancer Metastasis and Treatment Lab., NCI-Fredrick Cancer Res. Facility, P.O. Box B, Fredrick, MD, 21701
Cancer Immunol Immunother; 12(3):211-215 1982

Incidence of late tumor metastasis was examined in previously immunized inbred male Sewall Wright strain 2 guinea pigs and the factors contributing to the tumor recurrence were determined focusing on the relation of tumor relapse to the emergence of minor subpopulations of tumor cells that were less immunogenic than the parent tumor. Guinea pigs bearing L10 tumor could be cured of their systemic tumor burden by vaccination with x-irradiated L10 tumor cells admixed with BCG. All unvaccinated animals that received 10(6) L10 tumor cells by iv injection died from pulmonary tumors between 40-90 days after injection, with a median survival time of approx 65 days. When animals were treated with vaccine on days 1 and 8 following tumor induction, some of the animals died as early as controls, but the majority survived more than 180 days. Two animals, which had had been treated with vaccine and which survived more than 100 days, showed evidence of respiratory distress and were identified as presumptive late treatment failures. Two putative variant cell lines, L10-1 and L10-2, were isolated from their lymph nodes. Immune reactivity to the parent L10 and L10-1 was similar in all animals, whereas reactivity to L10-2 was significantly lower. Both the L10 parent and L10-1 were able to immunize and to elicit responses to the same extent. L10-2 was less antigenic in both the induction and the elicitation of immune responses. Results were compatible with the hypothesis that L10-2 expresses functionally less tumor-associated antigen. (32 Refs)

73. IDENTIFICATION OF CYTOKERATIN ANTIGENS IN NOVIKOFF ASCITES HEPATOMA.

Schmidt WN, Pardue RL, Tutt MC, Briggs RC, Brinkley BR, Hnilica LS
Dept. Biochemistry, A.B. Hancock Jr. Memorial Lab., Vanderbilt Univ. Cancer Center, Vanderbilt Univ. Sch. Medicine, Nashville, TN, 37232
Proc Natl Acad Sci USA; 79(10,part1):3138-3142 1982

Further characterization of three polypeptide antigens present in Novikoff ascites hepatoma (mol wt 39,000, 49,000, and 56,000-p39, p49, and p56, respectively), has established the identity of these proteins as cytokeratins. Two-dimensional gel electrophoresis revealed that each of the three proteins exists in several isoelectric forms, all characteristic of the keratins. The antigens p39 and p56 had amino acid compositions compatible with this family of proteins, and immunofluorescence microscopy localized the antigens on elaborate filament arrays indicative of the cytokeratins. Antibodies monospecific for the p39 antigen, purified by using affinity chromatography, were used to demonstrate that protein p39 was specific for Novikoff hepatoma cells. These results suggest that the cytokeratins contain cell-specific species that can be useful as markers for differentiation and neoplasia. (Author abstract) (50 Refs)

74. CONTRASTS IN TRANSPORT SYSTEMS FOR ANIONIC AMINO ACIDS IN HEPATOCYTES AND A HEPATOMA CELL LINE HTC.

Makowske M, Christensen HN
(c/o Christensen) Dept. Biological Chemistry, Univ. Michigan Medical Sch., Ann Arbor, MI, 48109
J Biol Chem; 257(10):5663-5670 1982

The uptake of anionic amino acids by the rat hepatoma cell line, HTC, occurs by two saturable routes, one Na+-dependent and one Na+-independent. Which of the two mediations will serve for transport of a given anionic amino acid depends on the chain length of that anionic substrate. The Na+-independent system, shared by glutamate, cysteine, and anionic amino acids intermediate in length between the two, is stereoselective, pH-independent, and not inhibited by neutral amino acids. The pH-independent inhibition of this system by LL-beta-mercaptolactate-cysteine disulfide confirms that cystine reacts as an anionic amino acids. Shorter anionic amino acids, including aspartate, are scarcely transported by this route. The accommodation of the cystine molecule calls for its stabilization as an anion even below pH 7. Inhibition triple that of cysteine by the product of its hydrolytic monodeamination confirms this interpretation. A Na+-independent system similar to the one described here has been reported for fetal human lung fibroblasts. In contrast, the Na+-dependent route for anionic amino acid uptake by HTC cells is shared only by the three short anionic amino acids, aspartate, cysteate, and cysteinesulfinate, among the analogs tested. Characteristics of the latter system include an unexplained type of pH dependence and inhibition by threonine and other amino acids known to be substrates for System ASC. Both systems for anionic amino acid uptake in the HTC cell have properties different from those of the two saturable, Na^+-dependent routes of anionic amino acid uptake previously described for the cultured rat hepatocyte. (Author abstract) (28 Refs)

75. CHOLANGIOCELLULAR CARCINOMAS INDUCED IN SYRIAN GOLDEN HAMSTERS ADMINISTERED AFLATOXIN B1 IN LARGE DOSES.

Moore MR, Pitot HC, Miller EC, Miller JA
(c/o Miller) McArdle Lab. Cancer Res., Univ. Wisconsin Medical Sch., 450 North Randall Ave., Madison, WI, 53706
JNCI; 68(2):271-278 1982

The hepatocarcinogenicity of aflatoxin B1 (AFB1) was compared in male Syrian golden hamsters and inbred F344 rats. AFB1 was administered by gavage 5 days/wk for 6 wk at doses of 1 and 2 mg/kg body wt/day to rats and hamsters, respectively, rats did not survive beyond 3 wk with doses of 2 mg/kg/day. After 6 wk the animals either received no further treatment or were given 0.1% phenobarbital sodium in the drinking water. ATPase-deficient foci of hepatic parenchymal cells, neoplastic nodules, and hepatocellular carcinomas were observed in liver sections from AFB1-treated rats killed at 6, 14, or 23 wk; they were not seen in sections from AFB1-treated hamsters killed at 6, 14, or 46 wk. Each of the 50 AFB1-treated rats developed hepatocellular carcinomas by 46 wk; many also had cholangiocarcinomas and mixed hepatocellular-cholangiocellular carcinomas. Hepatocellular carcinomas were found in only 2 of 49 AFB1-treated hamsters by 78 wk. At this time cholangiomas were found in 15 hamsters, and microscopic cholangiomas were seen in all of the livers. Compared to the rat, the hamster was resistant to the hepatotoxic and hepatocellular carcinogenic effects of AFB1. (Author abstract) (32 Refs)

76. METABOLISM AND MUTAGENIC ACTIVATION OF 2-ACETYLAMINOFLUORENE BY HUMAN LIVER AND LUNG.

Boobis AR, Brodie MJ, McManus ME, Staiano N, Thorgeirsson SS, Davies DS
Dept. Clinical Pharmacology, Royal Postgraduate Medical Sch., London, England
Adv Exp Med Biol; 136(partB):1193-1201 1982

Ability of microsomal fractions of human liver to metabolize 2-acetylaminofluorene (2-AAF) and the capacity of subcellular fractions of human liver and lung to convert 2-AAF and N-hydroxy-2-acetylaminofluorene (N-OHAAF) to mutagens were investigated. Microsomal fractions of human liver were relatively active in metabolizing 2-AAF, total oxidative metabolism being greater than that of male Sprague-Dawley rats. Rank order of activities with human liver was 7-hydroxylation greater than 3-hydroxylation greater than 9-hydroxylation greater than 5-hydroxylation. Thus, man is much more active at N- and 3-hydroxylation of 2-AAF than either rat or Rhesus monkey. In biopsies with preserved hepatic architecture, cigarette smoking was associated with significant increases in arylhydrocarbon hydroxylase (AHH) and 1-acetylaminofluorene 3-hydroxylase (2-AAF-3H) activities but not with any significant change in the other 2-AAF hydroxylases or in total cytochrome P-450 content. The correlation between 2-AAF-3H and AHH was significant (0.778) but both enzyme activities were increased in cigarette smokers. When the correlation coefficient was calculated for the non-smokers it was 0.532. The correlation between 2-acetylaminofluorene 7-hydroxylase and AHH was relatively poor (0.668) but only AHH activity was increased in cigarette smokers. No significant correlation between 2-acetylaminofluorene N-hydroxylase and AHH activities (0.554) could be seen. In non-smokers the correlation coefficient was only 0.452. Human liver microsomal fraction activated both 2-AAF and N-OHAAF into a mutagen, whereas human lung post-mitochondrial fraction activated only N-OHAAF into a mutagen. Considerable inter-individual variation in the ability of human tissue samples to activate 2-AAF into a mutagen was observed. The ability of microsomal fractions of human liver to activate 2-AAF to a mutagen did not correlate with N-hydroxylase activity nor with any other enzyme activity measured. Mutagenic activation of 2-AAF and N-OHAAF was unaffected by cigarette smoking. (16 Refs)

77. ESTABLISHMENT AND CHARACTERIZATION OF TWO HUMAN PANCREATIC CANCER CELL LINES TUMORIGENIC IN ATHYMIC MICE.

Dexter DL, Matook GM, Meltner PA, Bogaars HA, Jolly GA, Turner MD, Calabresi P
Dept. Medicine, Roger Williams General Hosp., 325 Chalkstone Ave., Providence, RI, 02908
Cancer Res; 42(7):2705-2714 1982

Two human pancreatic cancer lines, RWP-1 and RWP-2, have been established from two patients with primary pancreatic cancer metastatic to the liver. The patients' tumors, the xenografted tumors, and tumors obtained by inoculation of nude mice with cultured RWP-1 and RWP-2 cells are all moderately-well-differentiated ductal cell adenocarcinomas. Ultrastructural analysis supports the tissue histopathology findings. Xenografts of RWP-1 tumors double every 10 days, whereas the doubling time of RWP-2 xenografts is 22 days. Both tumors contain mucin. RWP-1 and RWP-2 cells have a doubling time in culture of 45 hr and form colonies in soft agar. RWP-1 cultures appear to be morphologically heterogenous; two distinct epithelial cell types can be identified. RWP-1 and RWP-2 have modal chromosome numbers of 64 and 62, respectively. Appreciable levels of glucose-6-phosphate dehydrogenase and lactic dehydrogenase were found in both cell lines and xenografts. RWP-1 and RWP-2 cells produce appreciable amounts of carcinoembryonic antigen, 1,090 and 414 ng/10(6) cells, respectively. (Author abstract) (51 Refs)

78. CHEMOTHERAPY OF PANCREATIC ADENOCARCINOMA: INITIAL REPORT ON TWO TRANSPLANTABLE MODELS IN THE SYRIAN HAMSTER.

Chang BK, Gutman R
Hematology Oncology Section (111E), Veterans Admin. Medical Center, Augusta, GA, 30910
Cancer Res; 42(7):2666-2670 1982

Experimental evaluation of chemotherapy of pancreatic cancer has been limited by the lack of suitable animal models, which have only recently become available. The present study is the first report on the chemosensitivity of two transplantable animal models of pancreatic adenocarcinoma. The single-agent antitumor activity of 5-fluorouracil, cyclophosphamide, mitomycin C (MMC), methotrexate, actinomycin D, vincristine and two dose levels of adriamycin (ADR) were tested against established palpable tumors of well-differentiated pancreatic ductal adenocarcinoma (WD PaCa), a solid tumor model of the Syrian hamster. None of the agents or dosages of ADR were effective against palpable WD PaCa tumors. ADR, MMC, streptozotocin, and the combination of 5-fluorouracil, ADR, and MMC were similarly ineffective when administered 1 wk after WD PaCa implantation, while tumors were still nonpalpable. The behavior of poorly differentiated pancreatic ductal adenocarcinoma (PD PaCa), an ascitic model of the Syrian hamster, was studied for comparison. In vivo, with survival as the end point, PD PaCa is markedly sensitive to ADR, perhaps weakly sensitive to MMC, and resistant to streptozotocin. In vitro clonogenic assays from cultured PD PaCa and WD PaCa confirmed the pattern of response seen in vivo. The data suggest that these recently developed pancreatic cancer models can be profitably used and compared, both in vivo and in vitro, as examples of relatively chemotherapy resistant (WD PaCa) and more sensitive (PD PaCa) tumor models. (Author abstract) (13 Refs)

79. TISSUE DISTRIBUTION OF ADRIAMYCIN ADMINISTERED INTRAPERITONEALLY VS. INTRAVENOUSLY WITH SPECIAL EMPHASIS ON THE PANCREAS.

Chang BK

Hematology/Oncology Section (111E), Veterans' Admin. Medical Center, Augusta, GA, 30910

Bull Cancer (Paris); 69(2):172-175 1982

Pharmacokinetic data on adriamycin (ADR: 15 mg/kg) uptake and distribution were obtained following iv or ip administration of ADR to male Fischer rats. Uptake curves for both routes of administration were virtually identical. Only skeletal muscle showed approx 2x the uptake with ip vs iv ADR administration based on calculations of the area under the drug uptake curves (CXT). The heart uptake at 24 hr was significantly increased for ip administration (CXT of 114.8 for ip vs 78.8 for iv administration); the significance disappeared at 48 hr, suggesting that the potential for cardiac toxicity was no greater for ip than for iv administration. The pancreas showed significantly greater uptake than all other organs, except the spleen which exhibited comparable uptake. Brain levels of ADR were usually below detectability. The results indicated that there is an extremely high uptake of ADR in the normal pancreas and spleen of rats. The clinical significance of the findings is discussed. (13 Refs)

80. ULTRASTRUCTURAL ANALYSIS OF PANCREATIC CARCINOGENESIS. V. CHANGES IN DIFFERENTIATION OF ACINAR CELLS DURING CHRONIC TREATMENT WITH N-NITROSO-BIS(2-HYDROXYPROPYL)AMINE.

Flaks B, Moore MA, Flaks A
Dept. Pathology, Univ. Bristol Medical Sch., Univ. Walk, Bristol, England
Carcinogenesis; 3(5):485-498 1982

An electron microscope study was carried out on changes in the pancreatic acinar tissues of male Syrian hamsters during the course of induction of pancreatic neoplasia by lifetime weekly injections of N-nitroso-bis(2-hydroxypropyl)amine (BHP). The dominant process observed was a loss of differentiation of the acinar cells, leading to the development of a new population of cells that closely resemble centro-acinar or ductular cells. During this process, the original centro-acinar and ductular cells appear to be relatively unaffected by exposure to BHP. Thus, acinar cell dedifferentiation appears, in this experimental model, to be an important preliminary stage in neoplastic development. It is argued that these findings may have implications for the histogenesis of human pancreatic adenocarcinoma, considered hitherto to be ductal in origin. (Author abstract) (52 Refs)

81. BENZO(A)PYRENE METABOLISM AND ENTEROHEPATIC CIRCULATION IN THE RAT.

Chipman JK, Hirom PC, Frost GS, Millburn P
Dept. Biochemistry, St. Mary's Hosp. Medical Sch., London W2 1PG, England
Adv Exp Med Biol; 136(partA):761-768 1982

Enterohepatic circulation of benzo(a)pyrene (BP) metabolites were investigated in rats to determine the availability of potentially toxic metabolites to tissues within this cycle. [14C]-BP (3 uM/kg; 25 uCi/kg or 65 uCi/kg) was administered by iv injection to rats with bile duct cannulae. For enterohepatic recirculation experiments, 2-hr bile samples were collected from anesthetized rats receiving the [14C]-BP. The bile samples containing the [14C]-BP metabolites were cross-transfused into the duodena of bile fistulated rats, and the bile was collected from the recipients. Metabolites from the the bile samples were separated by high pressure liquid chromatography. The major identified metabolites in the bile extract were conjugates and/or polyhydroxylated metabolites, BP 4,5-diol, 9-OH BP, and 3-OH BP/BP 3,6-quinone; the proximate carcinogen benzo(a)pyrene 7,8-diol was not detected in these experiments. When biliary metabolites were cross-transfused to the duodena of bile duct cannulated rats, 18.7 +-6.5% of the dose was re-excreted in the bile within 30 hr. The pattern of metabolites which had been recycled from duodenum to bile was very similar to that in the bile which had been infused. Metabolite A1 (unknown) was, however, only detected after recirculation of metabolites; this metabolite was found to increase in relative amount in the bile of rats where there was minimal interference to the enterohepatic circulation. As the process of enterohepatic circulation necessitates the transfer of biliary metabolites, which are mutagenic, though the intestinal wall, it is possible that the metabolites or their secondary products could react with nucleophilic sites in the intestinal wall. (13 Refs)

AUTHOR INDEX WITH CITATION NUMBERS

Adler M 45
Adson MA 38
Aguilar PS 39
Alexander RW 32
Allemand H 2
Almero EM 63
Altieri A 3
Amsel J 65
Ancona E 60
Anderer FA 15
Angermann B 38
Angus D 62
Ansay J 45
Aoki K 61
Arlauskas A 62
Attar S 27
Axelsson G 58
Azzarini G 60
Babin P 25
Bai Y 11
Baker R 62
Bauer P 19
Benjamin IS 44
Berke M 71
Berson SD 23
Berthelot P 52
Birh E 2
Birnie GG 49
Blaszczyk M 48
Bloch P 25
Blumberg BS 53
Blumgart LH 44
Bogaars HA 77
Bonfils S 19
Bonfils S 21
Bonin A 62
Boobis AR 76
Bowley NB 44
Boyle P 49
Brechot C 52
Briaud M 25
Briggs RC 73
Brinkley BR 73
Brockhaus M 48
Brodie MJ 76
Brummendorf T 15
Bucana C 71
Budgeon LR 23
Bulatao-Jayme J 63
Bury P 16
Byczkowska Z 66
Calabresi P 77
Callard P 52
Cameron JL 46
Carayon P 2
Carnot F 52
Castellino RA 37
Castro CA 63
Chang BK 78
Chang BK 79
Chang FY 18
Chang TW 17
Chang YM 59
Chen TC 18
Chi ZS 11
Chipman JK 81
Christensen HN 74
Chuong CM 17
Ciavarella G 3
Clarke G 59
Clemencon HG 1
Cohen C 23
Cohn I 14
Cole FN 27
Courouce AM 52
Cremer M 45
Crone-Munzebroc 5
Csikos M 50
Davies DS 76
De Toeuf J 45
Denkhaus H 5
Deschamps JP 2
Dexter DL 77
Dogra RK 69
Dortscheva Z 8
Du BH 4
Duhamel G 52
Dunham F 45
Duprey F 25
Farthmann EH 30
Fasano JJ 19
Fischer R 15
Fischer S 13
Flaks A 80
Flaks B 80
Fong MS 18
Freeny PC 7
Fritsch WP 30
Frost GS 81
Fujiyama T 36
Fukuzumi A 6
Gall FP 38
Gauffeny B 2
Gazzaniga GM 28
Ge M 59
Geerts L 16
Ginsburg V 48
Goldfarb R 71
Gutman R 78
Habib NA 44
Hagenmuller F 47
Hakami F 43
Hakkiluoto A 8
Hankins JR 27
Hanna MG 71
Hanna MG 72
Harder F 41
Hardy TG 39
Hartmann RF 39
Henkart P 71
Herberman R 71
Herkert F 41
Hervoir P 19
Hirom PC 81
Hnilica LS 73
Hodges G 59
Hodgson RM 67
Hodkinson J 56
Hollowell JG 64
Honma A 57
Horikawa S 36
Hornung A 15
Horvath O 50
Hosogi Y 6
Hoyer L 71
Huang NX 4
Huang XQ 4
Huchzermeyer H 31
Huguet C 43
Ibanez L 43
Ichida F 57
Ihamaki T 8
Imai S 6
Imre J 50
Isaacson C 51
Ishii H 10
Ito H 20
Iwamoto T 20
Iwasaki S 6
Iwatsuki S 33
Jardeleza TR 63
Jarrett F 49
Jin ZM 11
Johnson PJ 54
Jolly GA 77
Jordan P 59
Kajihara H 20
Kambayashi J 36
Katsunuma T 22
Katuragi M 6
Kaufman S 46
Kawano Y 24
Kawasaki H 24
Kawasaki H 68
Kew MC 56
Key ME 71
Key ME 72
Kharchenko VP 12
Kichikawa K 6
Kimoto E 68
Kleihues P 67
Kobari M 26
Kodera T 26
Kojiro M 24
Koprowski H 48
Kosaki G 36
Kuroda C 36
Lambilliotte JP 45
Lasseque A 2
Laxen F 8
Lenormand Y 25
Li HR 4
Lin Chu M 17
Lin S 18
Lin WS 17
Liu FS 59
Liu JH 11
Liu W 11

Loygue J. 43
MacSween RN 49
Magnani J. 48
Makowske M. 74
Marks WM 7
Marshall K. 65
Mastrangelo G. 60
Matook GM 77
Matsuno S. 26
Matuchansky C. 25
Matuo N. 6
McGuigan JE 32
McLaughlin JS 27
McManus ME 76
McPherson GA 44
Meitner PA 77
Merkle NM 42
Meyer HJ 31
Mignon M. 19
Mignon M. 21
Mikami F. 10
Millburn P. 81
Miller EC 75
Miller JA 75
Mills PR 49
Mitomi T. 22
Mittelmeier HO 9
Moisse R. 16
Monden M. 36
Montemurro S. 29
Moore MA 80
Moore MR 75
Moreau J. 19
Morichaud-Beauc 25
Morishige F. 68
Muhe E. 38
Murata T. 6
Nagata S. 10
Nakamura H. 36
Nakamura K. 34
Nakasaki H. 22
Nakashima T. 24
Nalpas B. 52
Neri V. 29
Neuberger JS 64
Newman R. 59
Nordlinger B. 43
O'Neill CH 59
Ogoshi K. 22
Ohishi H. 6
Ohue S. 6
Okamura J. 36
Okuda K. 24
Oler J. 65
Otuji H. 6
Pan QQ 59
Parc R. 43
Pardue RL 73
Paruzzolo P. 60
Paterson AC 51
Paterson AC 56
Pennington L. 46
Peracchia A. 60
Perriquey G. 2
Petri A. 50
Petri I. 50
Pichlmayr R. 31
Pickleman J. 40
Pitot HC 75
Pliess G. 9
Prete F. 29
Quigley EM 49
Radchenko NN 12
Rigaud D. 19
Rigaud D. 19
Roggia G. 3
Rosenwaike I. 65
Rossi M. 60
Ruggiero RP 13
Sakurai M. 36
Salamat LA 63
Samson RB 39
Sasaki R. 61
Sato T. 26
Saxena KC 69
Schmidt WN 73
Schweinsberg F. 67
Scoppetta L. 29
Shimamoto F. 20
Shirai F. 24
Sikujara O. 36
Sipponen P. 8
Snyder RL 55
Soga K. 57
Solimbergo D. 60
Song E. 56
Sorrentio P. 60
Srivastava L. 69
Staab HJ 15
Stadil F. 21
Stage JG 21
Staiano N. 76
Stegemann B. 70
Steplewski Z. 48
Stewart WR 39
Strazl TE 33
Sumiyoshi H. 20
Summers J. 55
Sun CY 4
Sutiagin AG 12
Suzuki T. 35
Szontagh E. 50
Tahara E. 20
Tajima T. 22
Takahashi H. 10
Takemoto N. 24
Tanaka H. 68
Taniyama K. 20
Thorgeirsson SS 76
Tiollais P. 52
Tomimatsu H. 24
Touchard G. 25
Toulson E. 59
Tricarico F. 3
Tsuda M. 22
Turner MD 77
Tutt MC 73
Tyler G. 55
Uchida H. 6
Ueda J. 6
Virtton D. 2
Voigt H. 5
Waterbor JW 65
Watkinson G. 49
Weill F. 2
Wiessler M. 67
Wilkinson WA 40
Williams R. 54
Wolfe MM 32
Wu L. 4
Xu XH 11
Yamada R. 34
Yamamoto M. 20
Yeh SH 18
Yoshida H. 6
Yoshioka T. 6
Zagury D. 71

Keep Up with the Cancer Literature

Each Month You Can Receive Abstracts Covering Your Specialty Area

- This convenient service — called Auto SDI* — is as near as your nearest biomedical library. Discuss your research interests with the librarian who will design an appropriate search strategy.
- Abstracts of the latest published literature are searched automatically each month and those related to your interests are delivered to you on a regular basis.
- The abstracts you receive are selected from more than 4,000 monthly entries made into CANCERLIT — the extensive cancer literature data base of the National Cancer Institute.

Talk With Your Librarian About the Auto SDI Service TODAY.

---

*Auto SDI stands for Automatic Selective Dissemination of Information. It is a service provided to you, at minimal cost, by the International Cancer Research Data Bank (ICRDB) — a part of the National Cancer Institute.

INTERNATIONAL CANCER RESEARCH
DATA BANK

Compilation of Experimental Cancer Therapy Protocol Summaries

COMPLIMENTARY COPIES
NOW AVAILABLE

April 1982
Sixth Edition

CONTENT

This document contains summaries of over 1200 open experimental clinical cancer therapy protocols from countries around the world.

Open protocols are arranged in sections according to the specific type of cancer.

Protocols closed in 1981 are listed by title, number, and investigator in a separate section.

INDEXES

Tumor index
Agent/Modality index
Protocol identification number index

Request for 1982 COMPILATION.
(Print Clearly for use as mailing label)

Name: ____________________

Address: ____________________

____

City/State/Zip: ____________________

Country: ____________________

Mail to:
Compilation Request
ICRDB Program
National Cancer Institute
Westwood Building Room 10A18
Bethesda, Maryland 20205

CANCER INFORMATION? CANC
ERLINE· CANCERLINE· CANCERL
INE ·CANCERLINE· CANCERLINE
·CANCERLINE· CANCERLINE· CA
NCERLINE· CANCERLINE ·CANCE
RLINE· CANCERLINE· CANCER
LINE ·**JUST MENTION OUR NAME**

Mention CANCERLINE to your librarian and the world's foremost collection of cancer information is at your disposal. With the help of this computerized data system, you can obtain information on the following:

Cancer Literature

The literature date base, **CANCERLIT**, allows you to survey more than 3,000 biomedical journals for information on your topic of interest. Your search will also alert you to meeting proceedings, monographs, and books published in that area. Informative abstracts averaging 200 words are provided with each citation;

Current Cancer Research

The data base **CANCERPROJ** allows you to retrieve descriptions of current work in any cancer research area. The descriptions, which state research objective, methodology, and experimental results, are supplied for projects underway in 77 countries around the world.

Cancer Therapy Protocols

The **CLINPROT** section of CANCERLINE is designed primarily for clinicians. It provides detailed summaries of currently active experimental protocols for any cancer site, agent, or type.

Ask your biomedical librarian about CANCERLINE.

CANCERLINE is sponsored by the International Cancer Research Data Bank—a program of the National Cancer Institute.

CANCERLINE

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-381-847:201

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

Ct19 /82/11

NCI/ICRDB/CT19 82/11

PB82-939411

ICRDB CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/11

NOVEMBER, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY

DEC 3 1982

U.S. GOVT. PUBS.
DEPOSITORY 376

In this issue:

- SCREENING AND DIAGNOSIS........................ 1-27
- PATHOLOGY, STAGING, AND PROGNOSIS........................ 28-37
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS........................ 38-42
- SURGICAL AND RADIATION THERAPY..... 43-54
- DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY........................ 55-60
- SELECTED CLINICAL CORRELATIONS...... 61-63
- REHABILITATION ASPECTS........................ 64-68
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER........................ 69-83
- SELECTED PRE-CLINICAL STUDIES........... 84-98

SCREENING AND DIAGNOSIS

1. FINE NEEDLE ASPIRATION CYTOLOGY IN DIAGNOSIS OF HEPATIC MALIGNANCIES.

Acharya GS, Nayak SK, Panda K, Devi A
Dept. Pathology, Regional Centre for Cancer Res. and Treatment, Cuttack, Orissa, India
Indian J Cancer; 19(2):71-76 1982

The accuracy of fine needle aspiration cytology and conventional liver biopsy with use of the Menghini needle was compared in 72 cases of clinically suspected hepatic malignancies. The cytological study was performed on material aspirated from the liver, smeared on two slides, one of which was stained with the Papanicolaou stain, the other with Alcian blue, to demonstrate intracytoplasmic mucin. Primary and secondary hepatic malignancies were confirmed in 8 and 48 cases, respectively. None of the 56 cases confirmed histologically were missed by cytology. There were 16 cases of liver enlargement where both cytology and biopsy did not reveal malignancy: 5 were shown to be carcinoma of the stomach with obstructive jaundice and enlarged left supraclavicular glands; 3 represented carcinoma of the head of the pancreas; 4 were diagnosed as early nutritional cirrhosis and one as chronic active

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service • National Institutes of Health • National Cancer Institute

HE 20.3173/2:

hepatitis on the basis of the biopsy material. In the remaining three cases, the liver biopsy suggested hepatitis and the patients were referred for anti-amebic treatment. There were no false positive reports from the cytological studies. There were no complications due to fine needle aspiration of the liver. (12 Refs)

2. DIAGNOSTIC AND THERAPEUTIC ENDOSCOPY IN ESOPHAGOGASTRIC HEMORRHAGES.

Anakhasian VR, Perminova GI, Kovalev AI, Bastatskii VG, Sokolov AA, Makhovskii VZ
Dept. General Surgery, Faculty Therapy, N. I. Pirogov Second Medical Inst., Moscow, USSR
Klin Khir; (4):16-19 1982

Of 1,127 patients with gastrointestinal hemorrhages subjected to emergency endoscopy, 48 had cancer of the proximal region of the stomach. Hemostatic effect was achieved in 39/48, while nine had to undergo emergency surgery. Of 39 patients, 10 developed recurrent hemorrhage within 2-5 days after endoscopy. (1 Ref) (In RUS)

3. CHANGE IN THE PICTURE OF GASTRIC ENTEROLOGIC DISEASE THROUGH ENDOSCOPY: DIAGNOSTIC AND THERAPEUTIC PROGRESS IN GASTRIC CARCINOMA.

Rosch W
Medizinische Klinik, Nordwest-Krankenhaus, Steinbacher Hohl 2-26, D-6000 Frankfurt/Main 90, W. Germany
Z Gastroenterol; 20(5):257-262 1982

The results of endoscopic diagnosis of gastric carcinoma has improved with increased experience and improved equipment, such as the side-looking endoscope. The proportion of gastric carcinomas detected while in the early stages has increased to 10-30%. Early detection has improved chances for successful treatment. Endoscopy allows differentiation of benign and malignant lesions with 99.8% accuracy, although the extent of tumor invasion cannot always be determined. Because diffuse carcinomas often show discontinuous growth, safety margins in examination must be increased. Current evidence has not confirmed an increased tendency towards malignancy in patients with gastric ulcers. Carcinoma may rarely result from an ulcerative condition. Endoscopy allows detection of precancerous conditions such as adenomas and borderline lesions. The value of endoscopy as a screening method in high-risk patients is under discussion. Postoperative endoscopic monitoring of patients is important. Examinations at 3-mo intervals are recommended. Endoscopy has to a great extent replaced radiological diagnosis of gastric carcinoma. (34 Refs) (In GER)

4. ENDOSCOPIC DIAGNOSIS OF SUPERFICIAL SPREADING TYPE EARLY CARCINOMA OF THE STOMACH: STUDY ON THE EXTENT OF PROXIMAL BORDER CANCEROUS LESIONS.

Kumagai K, Maekawa K, Urabe M, Gonda H, Hayashida Y, Kidokoro T
First Dept. Surgery, Juntendo Univ. Sch. Medicine, Tokyo, Japan
Gastroenterol Endosc; 24(1):22-28 1982

Of 487 patients with early stage gastric cancers that were treated with complete gastrectomy from 1967-1979, 76 had so-called superficial spreading carcinoma (SSC; tumor greater than 5 cm x 5 cm). The cases of SSC were divided into eruptive (13 cases) and depressed (63) types. Because determination of the proximal borders of the depressed type SSC is much more difficult than determination of the proximal borders of the eruptive type, clinical findings of the depressed type SSC were investigated in detail. The proximal marginal infiltrating patterns of depressed SSC were divided into two types. In Type I, the level of the cancerous tissue was lower than the normal tissue on the proximal border. In Type II, the level of the cancerous tissue was approximately the same as that of the normal tissue on the proximal border. The surface patterns of the cancer and normal tissues were classified according to whether they were smooth or wavy. Type b surface had a smooth cancerous tissue surface and a wavy normal tissue surface. Most (23/63) cases of the depressed type SSC were Type IIb. Based on endoscopic findings, Type IIb cases without covering foveolar epithelium showed redness and discoloration, hemorrhage, and erosion, but those without covering foveolar epithelium had no characteristic findings. As most of the proximal infiltration of the depressed SSC was located in the intermediate zone, endoscopic observation of the intermediate zone was considered to be clinically important. (16 Refs) (In JPN)

5. METHOD OF INJECTION OF RADIOCONTRAST MEDIA INTO THE SUBMUCOUS LAYER OF THE STOMACH VIA THE FIBROENDOSCOPE.

Britsis FA, Demidov GI, Apinis BK, Tseplite RK, Laganovskis AIa
Res. Inst. Experimental and Clinical Medicine, Riga, USSR
Klin Med (Mosk); 60(4):19-23 1982

Diagnostic efficacy of transendoscopic lymphography of the stomach was evaluated in 139 patients (90 men, 49 women; 30-80 yr old) who had stomach tumors or chronic stomach ulcer. Of the 139 patients, 78 were subjected to submucous injection of water-soluble radiocontrast media (RCM) and 61 were injected with oil-base RCM. The oil-base RCM provided a more effective visualization of the regional lymph nodes of the stomach than that provided by the water-base RCM; regional metastases were diagnosed in 60.3% of the patients injected with the oil-base RCM, compared with only 8.9% of the patients injected with the water-soluble RCM. (6 Refs) (In RUS)

6. COMPARISON OF RADIOLOGICAL AND ENDOSCOPIC FINDINGS IN THE DIAGNOSIS OF DISEASES OF THE UPPER SEGMENT OF THE DIGESTIVE TRACT.

Benelli R, Bayeli PF
Istituto di Clinica Medica Generale, Universita di Siena, Siena, Italy
Minerva Dietol Gastroenterol; 28(2):111-117 1982

Endoscopic, radiological and surgical findings were compared in 92 patients with diseases of the esophagus, stomach and duodenum, including 6 patients with esophageal and 41 with gastric neoplasms. Exact correspondence between the endoscopic, radiological and surgical findings, and the definitive, certain diagnosis was observed in 86.95%, 70.24% and 95.94% of all cases, respectively. The endoscopic diagnosis was found to be correct in 17/28 patients with neoplasms. (11 Refs) (In ITA)

7. PRIMARY CARCINOMA OF THE DUODENUM.

Fehr HF, Peter HJ, Woodtli S, Akovbiantz A, Muller C, Dolder A, Aeberhard P, Kessler W, Hammer B, Widgren S, Stalder GA, Deyhle P, Muhlethaler JP
Medizinische Klinik, Kantonsspital Aarau, 5001 Aarau, Switzerland
Praxis; 71(21):911-919 1982

Primary carcinoma of the duodenum (PCD) in 62 patients is reported. Most of the tumors were adenomas. The primary diagnostic tools were panendoscopy and biopsy, sometimes combined with hypotonic duodenography. Classification of endoscopic appearance was difficult in advanced cases. The etiology of PCD is uncertain. Early stages should be treated by en bloc pancreaticoduodenoectomy. Delay by physicians in diagnosis was a problem in the reported series. (9 Refs) (In GER)

8. A METHOD OF COMPLETE PHOTODOCUMENTATION OF THE UPPER GI TRACT DURING SCREENING USING A SKINNY FIBERSCOPE.

Mizuochi K, Suzuki Y, Matsuo K, Nakano M, Otsuka S
First Dept. Internal Medicine, Toho Univ. Sch. Medicine, Tokyo, Japan
Gastroenterol Endosc; 24(1):59-69 1982

Endoscopic examinations were performed in 3,405 patients with the aid of an Olympus GIF-P2 skinny forward-viewing fiberscope, which is capable of turning in all directions. All areas of the esophagus, stomach, and duodenum were visible by using a particular sequence involving 3 photographs of the esophagus, 2 of the esophago-gastric junction, 11 of the corpus, 8 of the gastric angle and its periphery, 8 of the antrum, 6 of the duodenal cap, and 2 of the second portion of the duodenum. Of all the patients observed, 219 had malignant diseases only and 18 had malignant diseases associated with other diseases. The skinny fiberscope was especially good for analyzing wide lesions such as Type IIc gastric cancer. (13 Refs) (In JPN)

9. EVALUATION OF A FORWARD-VIEWING UPPER GASTROINTESTINAL ENDOSCOPE (GIG-QW).

Iwasaku A, Nakajima M, Mitsuyoshi H, Takebayashi M, Yasuda K, Tanaka Y, Fujimoto S, Akasaka Y
Dept. Internal Medicine, Biwako Gastrointestinal Hosp., Biwako, Japan
Gastroenterol Endosc; 24(1):70-79 1982

The GIF-Qw upper gastrointestinal endoscope with an extra-wide visual angle was used to examine 1,078 patients. The endoscope presented clear views of all areas from the esophagus and gastric lumen to the duodenal bulb. However, the front view of the papilla of Vater was inferior to that observable with a side-view endoscope. One case of esophageal cancer, 15 early stage gastric cancers, and 19 advanced gastric cancers were diagnosed using this endoscope. (12 Refs) (In JPN)

10. PERITONEOSCOPIC DIAGNOSIS OF HEPATOCELLULAR CARCINOMA.

Liu JD
Dept. Internal Medicine, Taipei Municipal Jen-Ai Hosp., Taipei, Republic of China
Gastroenterol Endosc; 24(1):3-13 1982

Peritoneoscopic examinations were performed in patients (4-87 yr old) who had a total of 962 cases of hepatobiliary disease, ascites of unknown causes, and abdominal tumors. Of the 582 cases of hepatobiliary disease, 208 were hepatitis, 133 were liver cirrhosis, and 241 were neoplasms. The neoplasms included 180 cases of hepatocellular carcinoma (HCC), 47 metastatic carcinoma of the liver, 7 cholangiocellular carcinoma, and 7 others. Cirrhosis was associated with HCC in 147 patients (134 men, 13 women). Examination of age and sex differences among patients with HCC or metastatic carcinoma of the liver indicated that there was a significant difference between males and females with metastatic carcinoma of the liver. The male:female ratio of patients with HCC was 8.5:1. The primary peritoneoscopic features of HCC were hepatomegaly (174/180 cases), signs of portal hypertension (97/180), and ascites (94/180). Tumor masses were rarely observed in the left liver lobe alone, central umbilication was rarely observed among patients with HCC, and HCC was usually surgically resectable in clinically symptomatic patients. Peritoneoscopy using needle biopsy greatly aids in the final diagnosis of HCC and helps to avoid unnecessary exploratory laparotomy. (59 Refs)

11. THE SIGNIFICANCE OF ULTRASONOGRAPHY IN DISEASES OF THE LIVER AND BILIARY TRACT.

Koischwitz D, Hansen HH
Rontgen-Abteilung der Medizinischen Klinik, Radiologische Universitatsklinik, D-5300 Bonn 1, W. Germany
Therapiewoche; 32(22):2962,2965,2966,2968,2971,2972 1982

Ultrasonography (US) is an important means of screening for diseases of the hepatobiliary system. US also can be used preoperatively to obtain information necessary for surgery. Advantages of US include relatively low cost and high diagnostic accuracy. US is generally superior to other image-forming methods in diagnosis of hepatobiliary disease. Use of US can minimize risks in invasive diagnostic or therapeutic procedures. (20 Refs) (In GER)

12. THE SIGNIFICANCE OF SONOGRAPHY IN DIAGNOSIS OF THE PANCREAS.

Lutz H
Medizinische Klinik mit Poliklinik, Universitat Erlangen-Nurnberg, Krankenhausstrasse 12, D-8520 Erlangen, W. Germany
Therapiewoche; 32(22):2949,2950,2953,2956,2959,2960 1982

Careful ultrasonic examination (US) by an experienced examiner provides reliable information about all pancreatic diseases. US can be used for diagnosis and follow-up of acute pancreatitis, especially for recognition of necrosis and involvement of other organs. US can also be used in cases of chronic pancreatitis or pancreatic pseudocysts. Tumors of 2-3 cm or larger can be detected by the echo-poor structure. Demarcation of segmental chronic pancreatitis may present some uncertainty in differential diagnosis. (20 Refs) (In GER)

13. ULTRASONIC EXAMINATION OF ABDOMINAL ORGANS. II. DIAGNOSTIC EFFICACY IN LIVER DISEASES.

Mechkov G, Grigorov N, Karamfilova R
Military-Medical Inst., Medical Acad., Sofia, Bulgaria
Vutr Boles; 21(1):36-45 1982

Diagnostic efficacy of ultrasonic tomography (UT) was evaluated in 553 patients with various liver diseases. Correct diagnosis was made by the UT in 65.9% of the patients with chronic hepatitis, 68.9% of those with liver cirrhosis, 80.2% of those with metastatic carcinoma, 72.2% of those with primary liver carcinoma, and 96.3% of those with liver echinococcosis. (8 Refs) (In BUL)

14. THE RANGE OF INFORMATION PROVIDED BY ULTRASONOGRAPHIC DIAGNOSIS OF THE PANCREAS.

Hust W, Preim D, Bundschu HD
Abteilung Innere Medizin 2 der Medizinischen Fakultat, RWTH Aachen, Goethestrasse 27-29, D-5100 Aachen, W. Germany
Therapiewoche; 32(22):2982-2988 1982

Ultrasonic examination (US) is becoming routine in diagnosis of pancreatic disorders. US can detect macromorphologic changes in the size and form of the pancreas. Certain diseases produce typical changes in the pattern of reflections in the pancreas; US therefore allows differentiation of these diseases. The capacity for differentiation varies with the disease; the relative value of US therefore varies in comparison with diagnostic methods such as computer tomography and angiography. (17 Refs) (In GER)

15. USEFULNESS OF ECHOTOMOGRAPHY IN THE DETECTION OF DIFFERENTIAL DIAGNOSIS OF FOCAL LESIONS OF THE LIVER.

Anderegg A
Service de radiodiagnostique, CHU Vaudois, CH1011 Lausanne, Switzerland
Ann Gastroenterol Hepatol; 18(3):161-164 1982

The usefulness of echotomography in the diagnosis of solitary and multiple solid and cystic focal lesions of the liver is illustrated. Correct diagnosis can be established by echotomography in approx 88% of all focal lesions, but fine-needle biopsy with cytological examination is often necessary for differential diagnosis. Solid solitary lesions are suggestive mostly of primary liver tumors. Such findings suggest hepatoma in the presence of cirrhosis. Solid circumscribed multiple lesions are most often metastases. (23 Refs) (In FRE)

16. CHRONIC PANCREATITIS OR CANCER? DIFFERENTIAL DIAGNOSIS (II).

Moreno Moraga J, Obeso Fernandez G, Martin Sanz A, Gilsanz Garcia V
Primera Catedra de Patologia y Clinica Medicas, Hospital Clinico de San Carlos, Madrid, Spain
Rev Clin Esp; 164(3):141-147 1982

Results obtained with ultrasonography and computed axial tomography (CAT) in the differential diagnosis of chronic pancreatitis and pancreatic carcinoma are reviewed. Carcinoma of the pancreas was diagnosed in various series with a security of 83% by ultrasonography and of 81% by CAT. The combination of ultrasonography and CAT with endoscopic retrograde cholangiopancreaticography, cytology and histology provides a security higher than 90% in pancreatic diseases. (30 Refs) (In SPA)

17. COMPUTER TOMOGRAPHIC MORPHOLOGY OF BILIARY NEOPLASIAS.

Fischedick AR, Muller RP, Marincek B, Haertel M
Radiologische Klinik, Universitat Munster, Jungeblodtplatz 1, D-4400 Munster, W. Germany
Roentgenblaetter; 35(7):264-266 1982

The morphology of cholecystocarcinomas (CCC), cholangiocarcinomas (CAC), and papillary carcinomas (PC) in computer tomography (CT) was studied retrospectively in 36 patients (22 men, 14 women; 39-82 yr old). Tumors included 17 CCC, 15 CAC, and 4 PC. CCC included 7 in the hepatic bifurcation and 10 in the common bile duct. All patients underwent native-scan CT followed by CT with injection of contrast medium. Twenty-one tumors of the biliary tract ranged from 2 to 8 cm in diameter; 15 tumors of the gall bladder were 4-15 cm in diameter. Except for intramural and intraluminal tumors of the gall bladder, all tumors were hypodense in comparison to hepatic tissue after injection of contrast medium. Enlarged regional lymph nodes were found in 17/34 patients. Hepatic metastases were found in one patient with CCC and 12/15 with CAC. Invasion of the liver was found in 12/15 patients with tumors of the gall bladder and 8/21 with tumors of the biliary tract. Gall stones were found in 17 patients. Carcinomas of the hepatic bifurcation were characterized by dilation of the intrahepatic biliary tract. Tumors of the common bile duct and papilla were characterized by dilation of both intra- and extrahepatic biliary tracts. Tumors of the gall bladder were characterized by intramural, intraluminal, or infiltrative growth. (7 Refs) (In GER)

18. DIAGNOSTIC VALUE OF COMPUTED TOMOGRAPHY IN PANCREATIC CARCINOMA. A COMPARISON WITH OTHER RADIOLOGIC METHODS.

Kolmannskog F, Schrumpf E, Bergan A, Larsen S
Dept. Diagnostic Radiology, Medicine, Surgery, Rikshospitalet Oslo, Oslo, Norway
Acta Radiol [Diagn] (Stockh); 23(2):131-141 1982

Computed tomography (CT) performed on 54 patients with pancreatic carcinoma showed evidence of pancreatic disease in 44, but a definite diagnosis of an inoperable pancreatic carcinoma could be made in only 16 by revealing liver metastases. Differentiation between neoplastic and inflammatory disease was impossible in most patients, particularly in patients with resectable tumors. CT was found to be inferior to angiography, PTC and ERCP in diagnosing pancreatic carcinoma. CT was also significantly less sensitive than angiography in assessing operability. However, in patients where CT demonstrated liver metastases, angiography and ERCP may be avoided. (Author abstract) (37 Refs)

19. RADIOLOGIC ASSESSMENT OF RESECTABILITY OF CARCINOMA OF THE HEAD OF THE PANCREAS.

Hemmingsson A, Jacobson G, Lindgren PG, Lonnerholm T, Lorelius LE, Nordgren CE
Dept. Surgery, Diagnostic Radiology, Univ. Hosp., S-75014 Uppsala, Sweden
Acta Radiol [Diagn] (Stockh); 23(2):127-130 1982

Twenty-four patients with probably resectable carcinoma of the head of the pancreas were examined by means of CT, ERCP and US and supplemented with angiography to assess the resectability. Resection was possible in half of the patients. As the series consisted only of potentially resectable cases, those with obvious liver metastases at CT or US were not included. The three patients in whom CT or US revealed a tumor larger than 5 cm were inoperable. A distance less than 5.5 cm between the hilum of the liver and the proximal margin of the tumor measured in the common bile duct at ERCP also meant inoperability. Invasion of the superior mesenteric or splenic vein at angiography as an indication of non-resectability was confirmed at laparotomy in 12 of 13 cases. (Author abstract) (7 Refs)

20. FOCAL NODULAR HYPERPLASIA OF THE LIVER (FNH): IS A RADIOLOGICAL DIAGNOSIS POSSIBLE?.

Majewski A, Dohring W, Gratz KF, Brolsch C
Institut fur Klinische Radiologie, Medizinische Hochschule Hannover, Karl-Wiechert-Allee 9, D-3000 Hannover 61, W. Germany
Roentgenblaetter; 35(6):229-235 1982

Results of the use of ultrasonography (US), scintigraphy, angiography, and computer tomography (CT) were compared retrospectively in 10 patients with focal nodular hyperplasia (FNH) of the liver. The FNH was confirmed by biopsy in 6/10 patients and by histological examination of surgical specimens in 4/10. The US was the simplest and most sensitive method for detection of the liver FNH. CT with dynamic CTdensitometry using iv bolus injections of contrast medium was the most accurate method. (33 Refs) (In GER)

21. COMPUTED-TOMOGRAPHIC CHOLANGIOGRAPHY. A NEW TECHNIQUE FOR EVALUATING THE HEAD OF THE PANCREAS AND DISTAL BILIARY TREE.

Greenberg M, Greenberg BM, Rubin JM, Greenberg IM
Dept. Radiology, Univ. Chicago Hosp., Box 429, 950 E. 59th St., Chicago, IL, 60637
Radiology; 144(2):363-368 1982

Computed-tomographic cholangiography was used to evaluate the abdomen of 97 patients. The gallbladder and/or biliary tree was visualized well in 84 patients (87%); the distal common bile duct (CBD) was visualized well in 68 patients (70%). For 26 patients (30%) from the latter group, visualization of the opacified CBD was essential in order to differentiate the pancreatic head from the duodenum. Measurements of the distal CBD showed a significant difference between patients with gallbladders (mean, 4.7 +-1.2 mm) and those without gallbladders (mean, 6.8 +-1.1 mm). By visualizing the CBD and the superior mesenteric vein, exact dimensions of the uncinate process can be obtained. Also, the pancreatic head can be assessed more accurately, and the distal biliary tree can be evaluated. (Author abstract) (12 Refs)

22. DIAGNOSIS OF SMALL CANCERS OF THE PANCREAS BY ERCP.

Kurimoto K, Kuno N, Kasugai T, Ito Y, Tanehiro K, Umeda O, Kano T, Yasue M, Kido C, Sato T, Fujiwara K
Dept. Internal Medicine, Aichi Cancer Center Hosp., Nagoya, Japan
Gastroenterol Endosc; 24(1):40-49 1982

Pancreatograms, obtained by endoscopic retrograde cholangiopancreatoscopy (ERCP), were studied in six cases of resected small (less than 3 cm max diameter) pancreatic cancers. All cancers occurred in the head of the pancreas. Histologically, all cancers were either moderately- or well-differentiated tubular adenocarcinomas. The primary symptom in all cases was jaundice. Pancreatograms of the pancreatic duct showed marked stenosis with poorly visualized branches in four cases and obstruction in two. Most of the patients with cancers showing stenosis had elevated serum amylase levels. Pancreatograms of the small pancreatic cancers were essentially the same as those seen for advanced pancreatic cancers, but involvement was confined to a shorter segment of the main pancreatic duct. At surgery, all of the patients were observed to have either lymph node metastasis, duodenal invasion, or retroperitoneal invasion. Survival of the patients ranged from 39 days to greater than 16 mo. (28 Refs) (In JPN)

23. X-RAY CLUES TO ESOPHAGEAL DISORDERS.

Hochman RB
Div. Gastroenterology, Cornell Univ. Medical Center, New York, NY
Hosp Med; 18(6):33,36,40-41,47-51,58 1982

A practical approach to external pressure defects, cervical esophagus and upper esophageal sphincter, thoracic esophagus, lower esophageal sphincter and hiatus, and neuromotor esophageal disorders is presented. In a very high proportion of cases, the cause for dysphagia can be discovered on an esophagram. Carcinoma must be excluded in every case of dysphagia. Achalasia and Barrett's esophagus may be premalignant conditions. Benign tumors, most commonly leiomyomas are rare. Advanced carcinoma presents as an annular constriction with luminal shelving and/or ulceration. (no Refs)

24. DOUBLE-CONTRAST RADIOLOGICAL EXAMINATION OF THE STOMACH. TECHNIQUE AND RESULTS. COMPARISON OF THE RADIOLOGICAL AND ENDOSCOPIC FINDINGS IN 214 CASES.

Miceli F, Canossi GC, Torricelli P, Rigo GP, Perini M, Gandolfo M, Leoni A, Romagnoli R
Istituto di Radiologia, Universita di Modena, Modena, Italy
Minerva Dietol Gastroenterol; 28(2):105-110 1982

Two hundred and fourteen patients with symptoms suggesting gastric diseases were subjected to double-contrast radiological examinations followed by endoscopy with biopsy 2-5 days later. Pathological findings were obtained radiologically in 61 patients, including malignant neoplasms in 31/61, polyps in 7 and early gastric cancer in 1. The endoscopic findings were concordant with the radiological ones in 211/214 cases and discordant in 3/214, including the patient with radiologically diagnosed early gastric cancer. (21 Refs) (In ITA)

25. NON-FOCAL ENLARGEMENT IN PANCREATIC CARCINOMA.

Wittenberg J, Simeone JF, Ferrucci JT, Mueller PR, VanSonnenberg E, Neff CC
Dept. Radiology, Massachusetts General Hosp., Harvard Medical Sch., Boston, MA
Radiology; 144(1):131-135 1982

Pancreatic adenocarcinoma can appear radiographically as enlargement of the major part of the pancreas. In this series, part or all of three or more pancreatic segments (head, neck, body, and tail) were involved in 27% of patients with adenocarcinoma who had computed tomography. Differentiation from pure pancreatitis may require additional radiographic studies. The varied tissue composition of a pancreas enlarged by adenocarcinoma will often require biopsy of multiple sites for confirmation. (Author abstract) (24 Refs)

26. SYMPTOMS AND DIAGNOSTIC DELAY IN PATIENTS WITH CARCINOMA OF OESOPHAGUS AND GASTRIC CARDIA: A RETROSPECTIVE STUDY OF 225 PATIENTS.

Ojala K, Sorri M, Jokinen K, Kairaluoma MI
Dept. Otolaryngology, Univ. Oulu, Oulu, Finland
Postgrad Med J; 58(679):264-267 1982

A retrospective review of 225 patients was made with regard to the symptoms of carcinoma of the esophagus and gastric cardia, and the duration of the symptoms before medical attention was sought and before the establishment of the diagnosis. The age of the patients was 37-84 (mean 62.5) yr (139 male, 86 female). The most common symptoms were dysphagia (93%), loss of wt (46%), vomiting (33%), gastric pain (25%) and thoracic pain (21%). The av duration of the symptoms before the establishment of the diagnosis was 4.1 mo in carcinoma of the esophagus and 4.3 mo in carcinoma of the gastric cardia. The patients with esophageal disease had sought medical attention on av 5 wk earlier than those with gastric disease. The role of the physician who initially examines the patient is decisive for early diagnosis. (Author abstract) (13 Refs)

27. STUDIES ON AUTOFLUORESCENCE OF HEPATOMA EXCITED BY ARGON LASER LIGHT.

Ido K, Sakai H, Horiguchi M, Kimura K, Hirota N, Kato D
Dept. Gastroenterology, Jichi Medical Sch., Tochigi Prefecture, Japan
Gastroenterol Endosc; 24(2):265-268 1982

An argon laser light (Power: 300 milliWatt, Wavelength: 488 nanometer) induced an autofluorescence in both human and rat hepatocellular carcinoma when observed with a filter transmitting wavelengths greater than 520 nanometer. Areas of strong autofluorescence in the human liver was associated with hepatocellular cancer that was whitish yellow in sunlight, and weakly autofluorescent areas were associated with necrotized tissue that was dark black. The argon laser light autofluorescence phenomenon may be applicable to laparoscopic diagnosis of hepatocellular carcinoma. (10 Refs) (In JPN)

PATHOLOGY, STAGING, AND PROGNOSIS

28. PRIMARY MULTIPLE SYNCHRONOUS TUMORS OF THE GASTROINTESTINAL TRACT.

Fedorov VD, Vorob'ev GI, Mints IaV, Tugarinov AI
USSR
Khirurgiia (Mosk); (5):51-56 1982

One-hundred-seventeen patients (75 men, 42 women) with primary multiple synchronous tumors of the gastrointestinal tract are reviewed. Among these patients, 106 had tumors of the large intestine, and 11 had tumors of the large intestine and of the stomach. Preoperative diagnosis of primary multiple tumors was made in 61.3% of the patients. Diagnostic efficacy of x-ray examination was higher than that of colonoscopy (50% and 37.5%, respectively). Of 11 patients with synchronous colonic and stomach tumors, 5 underwent radical surgery: 2 underwent two-stage surgery (resection of the stomach and anterior resection, or gastrectomy and subtotal resection of the colon) and 3 underwent one-stage surgery. Of 106 patients with primary multiple colonic tumors, 76 underwent radical surgery (hemicolectomy, resection of the sigmoid, anterior resection, abdominal-anal resection, abdominal-anal extirpation, Hartmann's operation, or combined resections). The postoperative lethality in the patients with primary multiple tumors was 3.1%, compared with 3.0% in the patients with solitary colonic cancer (controls). The 5-yr survival rate was 65.6%, compared with 66.2% in controls. (13 Refs) (In RUS)

29. PRIMARY TUMORS OF THE SMALL BOWEL: A CLINICOPATHOLOGICAL STUDY OF 58 CASES.

Gupta S, Gupta S
Banaras Hindu Univ., 2-Medical Enclave, Varanasi-221005, India
J Surg Oncol; 20(3):161-167 1982

Various reviews documenting the rarity, diagnostic problems, and poor survival statistics prompted this retrospective clinicopathological study of 58 cases of primary small bowel tumors, periampullary and mesenteric tumors excluded, over a 14-year period between 1966 and 1979 inclusive. Of these cases 36 were male and 22 were female, ranging in age from 13 to 65 years. Initially, the symptoms were vague and ill defined. Prominent clinical features were: intermittent abdominal pain (64%), loss of wt (62%), abdominal lump (53%), and chronic bleeding (7%). Routine barium meal examination and laboratory investigations were not helpful in preoperative diagnosis. Of these tumors 28 were benign and 30 malignant, with the commonest benign and malignant tumors being leiomyoma and lymphoma, respectively. The commonest site of involvement was the ileum both for benign and malignant lesions. None of the benign tumors was found in the duodenum. All patients with benign tumors, discovered either at laparotomy for intestinal obstruction or during surgical procedures for other diseases, had excision of the tumor through enterotomy or resection of small bowel with end-to-end anastomosis. Of 30 patients with malignant tumors, 12 underwent resection of the growth and end-to-end anastomosis. Of the remaining 18 unresectable cases, 7 had by-pass procedures and 11 had only biopsy. All patients of benign tumors are well without any gastrointestinal symptoms. All the malignant cases, except three cases of adenocarcinoma and two of lymphoma who underwent resection, died within 5 years. The 5-year survival of only 8.6% in malignant tumors indicates the necessity of an early exploratory laparotomy in doubtful cases with vague abdominal symptoms. A bold interventionalist approach should improve the otherwise dismal outlook of malignant small bowel tumors. (Author abstract) (28 Refs)

30. PANCREATIC TUMOURS IN PATIENTS WITH PREVIOUS MALIGNANCY.

Whittington R, Moylan DJ, Dobelbower RR, Kramer S
Dept. Radiation Therapy and Nuclear Medicine, Thomas Jefferson Univ. Hosp., Eleventh and Walnut St., Philadelphia, PA, 19107
Clin Radiol; 33(3):297-299 1982

One hundred and ten patients were seen in the Department of Radiation Therapy at Thomas Jefferson University Hospital for pancreatic tumors between January 1975 and June 1980. Twelve patients had previously been treated for a non-pancreatic malignancy. Pancreatic biopsies were performed in nine patients and were interpreted as pancreatic carcinoma. When the previous pathological material was compared to the pancreatic biopsy, the diagnosis was changed in 5 of the 12 patients to recurrent non-pancreatic malignancy. We emphasize the importance of the distinction between primary pancreatic malignancy and metastatic disease in the pancreas. (Author abstract) (8 Refs)

31. CARCINOMA OF THE GALLBLADDER AND CHOLECYSTOSTOMY.

Castle WN, Wanebo HJ, Fechner RE
(c/o Wanebo) Dept. Surgery, Univ. Virginia Medical Center, Box 181, Charlottesville, VA, 22908
Arch Surg; 117(7):946-948 1982

Seven cases of carcinoma of the gallbladder after cholecystostomy were seen at the University of Virginia Medical Center, Charlottesville, between 1926 and 1979. These cases represented 6.7% of all cases of carcinoma of the gallbladder treated at that institution during that period. The interval between cholecystostomy and diagnosis of carcinoma ranged from 3 mo to 40 yr. Five patients had 'gallbladder' symptoms intermittently during the interval, and two patients did not. One of the patients had a confirmed calcified or porcelain gallbladder 5 yr before the development of carcinoma. At operation, none was found to have localized disease, and most had extensive metastatic disease. There were no survivors. Primary carcinoma of the gallbladder is an aggressive disease and difficult to diagnose. Few specific characteristics are available to the clinician and surgeon to detect this disease in its early stages. Patients who undergo cholecystostomy or have undergone cholecystostomy, with or without symptoms, should have elective cholecystectomy if they are acceptable operative risks.

Such a policy would prevent a small, but substantial, number of cases of carcinoma of the gallbladder. (Author abstract) (15 Refs)

32. MORPHOLOGICAL FEATURES OF INCIPIENT, INTERMEDIATE AND ADVANCED GASTRIC CANCER.

Smok G, Csendes A
Departamento de Anatomia Patologica y Cirugia, Hospital Clinico J.J. Aguirre, Santiago de Chile, Chile
Rev Med Chil; 110(4):345-350 1982

The morphological features of 287 stomachs resected because of gastric carcinoma were analyzed. Early gastric cancer (EGC) was diagnosed in 38 patients (av age 60.9 yr), intermediate gastric cancer (IGC) in 21 (av age 60.3 yr) and advanced gastric cancer (AGC) in 228 (av age 59.6 yr). The men-to-women ratio was 1.4 for EGC, 1.5 for IGC and 2.6 for AGC. The lesser curvature was affected in 50.3% of all 287 patients, the greater curvature in 7.7%, the anterior surface in 12.7%, the posterior surface in 16.2%, and the tumors were annular in 13%. The tumor size exceeded 24 square cm in 31.3% of the patients with EGC, in 33.2% of those with IGC and in 68.8% of those with AGC. Borrmann's Stage I was diagnosed in 3 patients with IGC and 10 with AGC, Stage IV in 4 with IGC and 67 with AGC. Papillary carcinoma was diagnosed in 14/287 patients, tubular carcinoma in 175, mucinous carcinoma in 17, signet-ring-cell carcinoma in 17 and undifferentiated carcinoma in 64. The patients with AGC included 10 with papillary carcinoma, 131 with tubular carcinoma, 17 with mucinous carcinoma, 10 with signet-ring-cell carcinoma and 60 with undifferentiated carcinoma. Intestinal metaplasia was found in 4/21 patients with IGC and 59/229 with AGC. The percentages of infiltrated lymph nodes were 2% in EGC, 10.8% in IGC and 33.6% in AGC. (18 Refs) (In SPA)

33. PRIMARY SARCOMA OF THE GALLBLADDER. A LIGHT AND ELECTRONMICROSCOPICAL STUDY.

Willen R, Willen H
Institute Histopathology, Univ. Hosp., S-221 85 Lund, Sweden
Virchows Arch [Pathol Anat]; 396(1):91-102 1982

Six Swedish cases of primary sarcoma of the gallbladder from the period 1958-1973 and one case from 1975 were studied by light and electron microscopy. The literature was reviewed for the period after 1970. Ultrastructural features of sarcoma were investigated in order to exclude poorly differentiated carcinoma. One case was considered to be an embryonal rhabdomyosarcoma, three cases leiomyosarcoma and two were diagnosed as fibrosarcoma. One case, diagnosed as sarcoma of the gallbladder by light microscopy, was omitted because electron microscopical examination revealed a squamous cell carcinoma. (Author abstract) (34 Refs)

34. FLOW CYTOMETRY, CYTOMORPHOLOGY, HISTOLOGY AND AUTORADIOGRAPHY IN HUMAN GASTRIC HYPERPLASTIC POLYPS AND THE SURROUNDING MUCOSA.

Petrova AS, Subrichina GN, Tschistjakova OV, Rottenberg WI, Weiss H, Gutz HJ, Steenbeck L, Wildner GP
All-Union Oncological Res. Center AM USSR, Moscow, USSR
Oncology; 39(5):308-313 1982

Forty-three cases of gastric hyperplastic polyps, 33 tissue samples adjoining the polyps and 7 tissue samples of the corpus mucosa were investigated by flow cytometry, cytomorphology, autoradiography and histology, respectively. All cases revealed diploid DNA distribution patterns. The results attributed an increased proliferative tendency to special cases of hyperplastic polyps and the surrounding mucosa. (Author abstract) (18 Refs)

35. ESOPHAGEAL LEIOMYOSARCOMA.

Franklin GO, Antler AS, Thelmo WL, Rosenthal WS
Dept. Medicine, Westchester County Medical Center, Valhalla, NY, 10595
NY State J Med; 82(7):1100-1103 1982

A total of 57 well-documented cases of esophageal leiomyosarcoma now appear in the world literature. Analysis of these cases reveals that this rare tumor; although associated with squamous carcinoma in 10% of cases, behaves quite differently than squamous carcinoma in that it tends to be polypoid, rarely invasive, rarely metastatic, and may carry a far better prognosis when treated with surgical resection. More emphasis in the future, however, must be placed on determining whether or not similar risk factors exist as for squamous carcinoma and on studying longer-term survival patterns to learn more about the behavior of this interesting tumor. (Author abstract) (44 Refs)

36. PROGNOSTIC SIGNIFICANCE OF REACTIVE ALTERATIONS IN THE LYMPH NODES IN CARCINOMAS OF THE STOMACH AND BREAST.

Riegrova D, Jansa P
Katedra patologicke anatomie, LF UP, S. Allenda 3, 775 00 Olomouc, Czechoslovakia
Cesk Patol; 18(2):90-96 1982

Regional lymph nodes were examined in 80 patients (48 men and 32 women, 37-80 yr old) with adenocarcinomas of the stomach and in 70 women (30-81 yr old) with infiltrating carcinomas of the breast, and the findings were correlated with the length of survival. Regional lymph node metastases were found in 34/80 patients with gastric carcinomas and in 52/70 patients with breast cancer. Fifty-eight of the 80 patients with gastric carcinomas and 30/70 with breast carcinomas died within the first 3 yr. Seventeen patients (7 with and 10 without metastases) with gastric cancer and 30 (16 with and 14 without metastases) with breast cancer survived 5 yr or longer. Lymphocyte predominance combined with sinus histiocytosis was found to be a prognostically favorable sign in both groups, and prevalence of germ centers along with sinus histiocytosis was an additional favorable prognostic sign in the patients with gastric cancer. Lymphocyte depletion, especially in the absence of sinus histiocytosis, was a prognostically unfavorable sign. The presence of isolated lymph node metastases itself, without regard to the reactive type, could not be interpreted as unfavorable for survival time. (20 Refs) (In CZE)

37. EXTRAHEPATIC BILE DUCT CARCINOMA.

Douglass HO, Karakousis CP
(c/o Karakousis) Dept. Surgical Oncology, Roswell Park Memorial Inst., Buffalo, NY, 14263
Abdom Surg; 24(4/5):73-77 1982

Experience with the management of 30 patients with extrahepatic bile duct adenocarcinoma is reported. Surgical resection, where possible, was the treatment of choice. One patient who underwent pancreaticoduodenectomy was alive and disease free 10 yr after surgery. The remaining four patients with resectable tumor had mean survival of 26.5 mo. Patients with locally infiltrative unresectable tumor who had biliary decompression experienced a mean survival of 13 mo, while patients in the same stage with inadequate or no biliary decompression had mean survival of 3 mo. Of patients with hematogenous spread, those with biliary decompression had a mean survival of 7.5 mo while those with inadequate or no decompression had a survival of 1.7 mo. Biliary decompression was important since patients with disseminated disease and biliary decompression lived on the av longer than patients with locally unresectable disease without relief of jaundice. Fourteen patients with unresected tumor and biliary decompression had a mean survival of 11.3 mo compared to 2.8 mo in 10 patients with comparable disease but who did not have biliary decompression. Stage of disease at time of surgery proved important in forecasting survival. While the mean survival of nine patients with locally unresectable tumor and adequate decompression was 13 mo, that of four patients with distant metastases and biliary decompression was 7.5 mo. Mean survival of 16 patients with locally unresectable tumor was 9 mo, while that of nine patients with hematogenous dissemination was 4.5 mo. Presurgical and surgical techniques and a simple method of staging are described. (14 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

38. EVALUATION OF 5'-NUCLEOTIDE PHOSPHODIESTERASE ISOZYME-V AS A PREDICTOR FOR LIVER METASTASIS IN BREAST CANCER PATIENTS.

Tsou KC, Lo KW, Rosato EF, Yuk A, Enterline H, Schwegman C

1515 Ravdin Inst., Hosp. Univ. Pennsylvania, 3400 Spruce St., Phila, 19104

Cancer; 50(2):191-196 1982

The compound 5'-nucleotide phosphodiesterase isozyme-V (5'-NPD-V) was evaluated in 85 biopsy proven breast cancer patients as a potential marker for early liver metastasis. It correctly predicts liver metastasis in 85.7% patients with abnormal radiologic liver scan and 100% other patients with palpable liver. Serum glutamic-oxaloacetic transaminase (SGOT), lactic dehydrogenase (LDH), alkaline phosphatase (AP) and total bilirubin (B) were also determined in 79 of these patients as routing liver function tests (LFT). Forty-one out of 79 from this group had all four markers all within normal limits. Yet of the 41 patients, 12 patients were found positive for 5'-NPD-V. Of these 12, one was found to have liver metastasis at surgery and one had abnormal liver scan. Five other patients had liver dysfunction and one had been diagnosed as an alcoholic. Four others had no evidence of either liver problems or liver metastasis, but follow-up data were lacking. This retrospective study, therefore, suggests that there is a definite advantage to include the 5'-NPD-V in the liver profile studies for breast cancer patients, although a positive 5'NPD-V may only indicate liver repair or liver regeneration. Long-term prospective studies of these tests with breast cancer patients should be worthwhile. No relation was found between 5'-NPD-V and axillary lymph node involvement or the estrogen receptor status of the excised tumor. Thus there is no evidence currently that the appearance of the 5'-NPD-V in serum is related to lymph node metastases or hormonal control. (Author abstract) (43 Refs)

39. LOCALIZATION OF THE SOURCE OF HYPERINSULINISM: PERCUTANEOUS TRANSHEPATIC PORTAL AND PANCREATIC VEIN CATHETERIZATION WITH HORMONE ASSAY.

Cho KJ, Vinik AI, Thompson NW, Shields JJ, Porter DJ, Brady TM, Cadavid G, Fajans SS

Dept. Radiology, Univ. Michigan Medical Center, Ann Arbor, MI, 48109

AJR; 139(2):237-245 1982

Insulin concentrations were measured in the portal venous system through the percutaneous transhepatic approach in 12 patients with organic hyperinsulinism. Single insulinomas were found in 10, an adenoma and islet cell hyperplasia in one, and nesidioblastosis in one patient. Angiography localized adenomas in two. Local step-ups of insulin levels in the portal venous system, found in all patients with insulinomas, corresponded to tumor sites at surgery. Multiple step-ups were found in the portal venous system of the patient with nesidioblastosis and the patient with an adenoma with islet cell hyperplasia. Three tumors were localized in the head of the pancreas which would dictate the primary surgical approach rather than blind resection of the body and tail. Three of the 10 adenomas were not identifiable by palpation after pancreatic mobilization during surgery. In all patients, organic hyperinsulinism was cured after surgery. Percutaneous transhepatic portal and pancreatic vein catheterization with measurement of radioimmunoactive insulin concentrations is a safe and reliable method and may play an important role in the localization of adenomas in patients with normal angiographic studies and previous negative surgical explorations. (Author abstract) (16 Refs)

40. AN ANALYSIS OF 21 PATIENTS WITH ZOLLINGER-ELLISON SYNDROME.

Feurle GE, Wenzel-Herzer G, Helmstaedter V, Klempa I

Med. Poliklinik, Univ. Heidelberg, Heidelberg, W. Germany

Verh Dtsch Ges Inn Med; (87):1028-1029 1981

Zollinger-Ellison syndrome in 21 patients is reported. Ten of these patients had gastrinomas, of which six were detected by immunohistological methods and four by transhepatic selective pancreatic venous catheterization. Eleven patients showed no evidence of gastrinoma. Tumors included two pure gastrinomas, one that was composed of 50% gastrin cells and 50% neurotensin cells, one that was 17% gastrin cells and 80% neurotensin cells, a gastrinoma of the stomach wall, and a pancreatic tumor that produced gastrin and ACTH. Patients with or without gastrinoma showed no differences in fasting gastrin levels, elevation of gastrin after administration of secretin and calcium, or basal and stimulated acid secretion. The death rate among gastrinoma patients was higher than that among nongastrinoma patients. Five patients died, including four in the immediate postoperative period and one of tumor growth. Diagnostic methods such as ultrasonography, computer tomography, celiacography, and exploratory laparotomy were generally unsatisfactory for localization of tumors. Laparotomy was more effective only when combined with rapid radioimmunoassay. Laparotomy with the aim of tumor removal should be performed only after selective transhepatic cannulization of the pancreatic veins with gastrin determination. Use of H2-receptor antagonists can reduce acid secretion without the lethality of total gastrectomy. In some cases 'pharmacologic gastrectomy' can facilitate curative surgery. (12 Refs) (In GER)

41. FURTHER EVIDENCE FOR THE USE OF POLYAMINES AS BIOCHEMICAL MARKERS FOR MALIGNANT TUMORS.

Horn Y, Beal SL, Walach N, Lubich WP, Spigel L, Marton LJ
Dept. Oncology, Assaf Harofeh Hosp., Sackler Sch. Medicine, Zerifin, Israel
Cancer Res; 42(8):3248-3251 1982

One hundred ninety patients with a variety of tumors presented within a specified time period and fit a specified protocol. Multiple serial urinary putrescine, spermidine, and spermine levels were obtained in these patients, and their disease activity over time, defined as either active or nonactive, was determined by clinical examination, the results of laboratory tests, and radiological criteria. Twenty-four-hr urine collections were used for analysis of polyamine levels. A linear mixed-effects model and the method of max likelihood estimation were used for statistical analysis. Statistically significant differences were found in polyamine levels between patients with active or nonactive disease for tumors of the breast, stomach, prostate, female genital tract, and a variety of metastatic carcinomas of unknown origin. There were 105 patients with these tumors; 319 polyamine determinations were obtained from this subset of patients. Our results suggest that serial determination of polyamine levels in urine may have clinical utility for monitoring the disease states for these tumors. (Author abstract) (14 Refs)

42. HISTOLOGICAL STUDY OF IMMUNE PARAMETERS OF REGIONAL LYMPH NODES OF GASTRIC CANCER PATIENTS.

Takeuchi H, Suchi T, Suzuki R, Sato T
Dept. Clinical Pathology, Aichi Cancer Center Hosp., 81-1159 Kanokoden, Tashiro-cho, Chikusa-ku, Nagoya 464, Japan
Gan; 73(3):420-428 1982

A total of 6,394 regional lymph nodes (RLNs) from 319 gastric cancer patients was evaluated histologically for sinus histiocytosis (SH), paracortical lymphocytes (PCL), overall lymphoid cell content (OL), germinal centers (GC), and medullary cord plasma cells (Pl). High grade SH, PCL, and OL reactivity was found in cancers confined to the mucosa and submucosa of the stomach wall, and GC and Pl reactivity in cancers that had invaded the subserosa or the serosa of the stomach wall. No stable relationship was found between the RLNs reactivity of patients with and without metastasis to the RLNs. Differences among RLNs reactivities according to location (n1, n2, n3+4) as defined by the Japanese Research Society for Gastric Cancer were evaluated, and n1, the most proximal nodes to the primary cancer, usually had the highest reactivity. As regards the prognostic value of these factors, OL and GC, but not SH, had a significant favorable relation to the 5-yr survival rate. In addition, sarcoid-like reaction was evaluated. (Author abstract) (48 Refs)

SURGICAL AND RADIATION THERAPY

43. EARLY DIAGNOSIS AND SURGICAL THERAPY OF ESOPHAGEAL CARCINOMA.

Huang GJ
Cancer Inst. and Hosp., Chinese Acad. Medical Sciences, Peking, China
Internist (Berlin); 23(5):264-268 1982

Experience with the diagnosis and therapy of esophageal carcinoma in China is reported. A mass screening covering 33,332 subjects revealed esophageal carcinoma in 384 patients, 309 of whom were in Stage I. Two hundred and thirty-seven patients (130 men and 107 women, av age 50.1 yr) with Stage I esophageal carcinoma were subjected to surgery. The tumors were diagnosed in connection with mass screening in 229-237 patients. The postoperative mortality was 2.5%. Carcinoma in situ was found in 84 patients, early carcinoma in 153. The 2-, 5- and 10-yr survival rates were 92%, 85.9% and 55.6%, respectively. Most patients who died after discharge died of unrelated causes. It was possible to perform resections in 1,373/1,647 patients in another series. The resection rates were 100% in Stage I, 83.2% in II, 83.2% in III and 52.8% in IV. The postoperative mortality was 4.1% and insufficiency of the anastomosis developed in 4.5% of 1,373 patients. The 2-, 5-, and 10- and 15-yr survival rates were 48.8%, 30.3%, and 21.2% and 16.2%, respectively. Three hundred and thirty-four patients of another series mostly in Stages III and IV, were subjected to preoperative radiotherapy (total dose 2,000-3,000 rads) and surgery. Insufficiency of the anastomosis developed in 4.5% of all patients. The 5-and 10-yr survival rates were 31.6% and 21.9%, respectively. The results indicate the value of preoperative irradiation. (1 Ref) (In GER)

44. ESOPHAGEAL CARCINOMA: A ONE-TIME PROCEDURE WITH STOMACH TRANSPOSITION AS A THERAPEUTIC CONCEPT.

Funovics JM, Roka R, Niederle B, Fritsch A
I. Chirurgische Universitatsklinik Wien, Alser Strasse 4, A-1090 Wien, Austria
Langenbecks Arch Chir; 357(1):53-62 1982

Twenty-nine patients (25 men, 4 women; 42-83 yr old) were treated for malignant esophageal stenosis. Of these, 28 had esophageal carcinoma (6 adenocarcinomas and 22 squamous-cell carcinomas) and 1 had a lymph nodal metastasis of a lung cancer that penetrated the esophagus. Three patients had stenosis in the upper third of the esophagus, 17 in the middle third, and 9 in the lower third. Curative radical extirpation of the esophagus with removal of periesophageal tissue was possible in 14 patients. Palliative extirpation was performed on five patients. Blunt dissection without thoracotomy was performed on six patients. Retrosternal or antethoracic bypass operations were performed on four patients; one of these had poor lung function and three had inoperable tumors. The stomach was transposed to the mediastinum in 7 patients, antethoracic in 1, and retrosternally in 21. Five patients died during hospitalization; two of these died of pneumonia, one of respiratory failure, one of erosive hemorrhage, and one of undetermined cause. Among 16 patients observed for at least 6 mo postoperatively, function of the esophageal replacement was generally excellent; dysphagia occurred with solid food in 4 and with liquid food in 1. Appetite was poor in 1 patient and moderate to good in 15. (23 Refs) (In GER)

45. CLOSURE OF EXTENSIVE DEFECTS OF THE PHARYNX AND OF THE CERVICAL REGION OF THE ESOPHAGUS WITH SKIN-ADIPOSE AND SKIN-MUSCULAR GRAFTS WITH AXIAL BLOOD SUPPLY.

Nerobeev AI
Dept. Surgical Stomatology, Central Inst. Advanced Training for Physicians, Moscow, USSR
Vestn Otorinolaringol; (3):47-51 1982

Method of closure of extensive defects of the pharynx and esophagus in 46 patients (44 men, 2 women; 26-75 yr old) with cancer of the larynx is described. The patients were subjected to laryngectomy and postoperative radiotherapy (total dose greater than 6,000 rads). The closure of the defects was achieved by the use of a complex skin flaps containing the sternocleidomastoid, trapezoid, pectoralis major, or deltopectoral muscles. Sufficient blood supply of the graft provided for rapid primary healing in 28/46 patients. (16 Refs) (In RUS)

46. THE ROLE OF THE FREE JEJUNAL GRAFT IN RECONSTRUCTION OF THE PHARYNX AND CERVICAL ESOPHAGUS.

Glickman JL, McDonough J, Donegan JC
Dept. Otolaryngology and Maxillofacial Surgery, Univ. Cincinnati Medical Center, 231 Bethesda Ave., Cincinnati, OH, 45267
Head Neck Surg; 4(5):360-369 1982

Techniques and complications of free jejunal graft for reconstruction of the pharynx and cervical esophagus are discussed based on 17 cases. Advantages of the technique include technical ease for the trained microvascular surgeon, a single-stage procedure, reliability and low complication rate, and possibility of early rehabilitation. Potential disadvantages include the need for a team approach involving at least one competent microvascular surgeon, poor speech rehabilitation, and inability to combine the method with postoperative radiation. (29 Refs)

47. RESULTS OF TREATMENT OF STOMACH CANCER AFTER RESECTION IN THE TUMOR ZONE.

Klimenkov AA, Timofeev IuM
Dept. Abdominal Oncology, All-Union Cancer Res. Center, Moscow, USSR
Khirurgiia (Mosk); (5):41-43 1982

Of 2,094 patients subjected to surgical treatment for stomach cancer, 237 had tumor infiltration in the margin of resection. Of 237 patients, 160 had infiltration of the proximal margin of resection, 70 had infiltration of the distal margin, 7 had involvement of both margins, and 133 patients had involvement of the submucous layer. Resection within the tumor tissue increased the incidence of anastomoses and duodenal stump insufficiency. The 5-yr survival in the patients with resection within the tumor tissue was 12.6%, compared with 33.5% in the patients with resection within the healthy tissue. Resection within the tumor tissue resulted in 1.6x increase of the incidence of tumor recurrences. These findings indicate that the patients with stomach cancer should undergo intraoperative express cytological examination of the resection margin. (14 Refs) (In RUS)

48. LEFT HEPATIC TRISEGMENTECTOMY.

Starzl TE, Iwatsuki S, Shaw BW, Waterman PM, Thiel DV, Diliz HS, Dekker A, Bron KM
Dept. Surgery, Univ. Pittsburgh, Scaife Hall, Pittsburgh, PA, 15261
Surg Gynecol Obstet; 155(1):21-27 1982

Left hepatic trisegmentectomy was successfully performed upon four patients in whom the true left lobe of the liver and all, or part, of the anterior segment of the right lobe of the liver were removed in continuity. three of the patients had carcinomas of the liver, and the fourth patient had a hemangioma and arteriovenous malformation. This procedure, which has not been described before, should allow subtotal hepatic resection to be performed upon some patients who have lesions that have been classified as inoperable, in the past. (Author abstract) (11 Refs)

49. NEOPLASIAS OF THE HEAD OF THE PANCREAS. BILIODIGESTIVE ANASTOMOSIS OR DUODENOCEPHALOPANCREATECTOMY?.

Marzano LA, Abate S, Ferulano GP>, Danzi M, Fresini A
Facolta Medicina e Chirurgia, Anatomia Chirurgica e Corso Operazioni, Napoli, Italy
Minerva Chir; 37(8):725-728 1982

One hundred twenty cases of pancreatic cancer, were operated between 1966-1978. Sixty two percent of the patients were men, with a median age of 66 yr. and had experienced intense pain for approximately 2 1/2 months. Surgical interventions consisted of explorative laparotomy in 10% of the cases, duodenocephalopancreatectomy (DPC) in 15% and biliodigestive anastomosis (BDA) in 75%. It is pointed out that although DPC was preferable in principle, BDA was often the only way to handle local conditions that prevented radical surgery. The mortality rate using DPC was 12% with respect to 0% for BDA yet the maximum survival rate with BDA was 10% one year post-operatively as compared to 57% with DPC. Among the various BDAs two forms of anastomosis, choledochoduodenostomy (A) and choledochojejunostomy (B) were compared with regard to speed of regression of the icterus and survival figures. In 50.7% of the cases personal preference was given to procedure B in which post-operative bilirubin levels diminished in 41 of 51 patients after the first day and 10 of 51 after the third day. The speed of regression was reported at 1.6 mg/day. Values obtained using procedure A were considerably lower with a decrease of bilirubin levels in 31 of 34 patients after the third day and 3 of 34 after the fifth. The speed of regression was 1.2 mg/day. However only 3% of the cases undergoing procedure A presented complications as opposed to 10% of those using procedure B. Most complications were respiratory in nature. (12 Refs) (In ITA)

50. PRIMARY GALLBLADDER CANCER.

Zhidovinov GI, Kozhanov VV
Surgical Clinic, Medical Inst., Volgograd, USSR
Khirurgiia (Mosk); (5):77-80 1982

Results of treatment of 80 patients (9 men, 71 women; 52 were greater than 61 yr old) with primary gallbladder cancer are reviewed. Surgery was performed in 77/80 patients. Correct preoperative diagnosis was made in 16 patients, while 61 were seen with diagnosis of liver cancer (20), acute cholecystitis (15), empyema of the gallbladder (4), pancreatic cancer (13), choledocholithiasis (6), peritonitis (1), obstructive jaundice (1), or intestinal obstruction (1). Radical surgery was performed in 19 patients (15 underwent cholecystectomy alone and 4 underwent cholecystectomy and atypical resection of the right liver lobe), while 58 underwent various palliative operations (hepatogastrostomy, recanalization of the hepatic ducts, cholecystostomy, drainage of the thoracic lymph duct) or diagnostic laparotomy. Of 77 patients subjected to surgery, 29 died postoperatively (21/29 patients died of acute liver insufficiency). Postoperative lethality was directly related to the duration of jaundice. (22 Refs) (In RUS)

51. RESULTS OF RADICAL RADIOTHERAPY OF SQUAMOUS CELL CARCINOMA OF THE OESOPHAGUS.

Newaishy GA, Read GA, Duncan W, Kerr GR
Dept. Clinical Oncology, Western General Hosp. and Royal Infirmary, Edinburgh, Scotland
Clin Radiol; 33(3):347-352 1982

A retrospective study was undertaken of 444 patients who were referred with squamous cell carcinoma of the esophagus during the period January 1956 to December 1974 and who were treated by radical radiotherapy. The overall crude survival rate at 5 yr was 9.0% which is similar to the results of most series reported from other centers and compares favorably with the results of radical surgery. The crude 5 yr survival rate was 5.7% for males and 11.6% for females, a significant difference (p less than 0.05). Survival is analyzed in terms of sex, site, size and histological grade. Patients (males and females) with the best 5-yr survival rates had tumors no more than 5.0 cm in length (11.9%) or confined to the cervical esophagus (18.9%). Histological grade appeared to have no influence on prognosis. The principal morbidity associated with radical radiotherapy is fibrous stricture formation. This occurred in 43.7% of the patients but was usually effectively managed by bouginage. (Author abstract) (4 Refs)

52. ELECTROGAMMAGRAPHY: A POSSIBILITY TO CONTROL THE FIELD IN RADIATION THERAPY.

Mamontov V, Telycenas A, Atkocius V, Reichel G, Freitag J, Freitag G
Onkologisches Zentralinstitut, Gesundheitsministeriums der Litauischen SSR, Vilnius, USSR
Radiobiol Radiother (Berl); 23(2):113-118 1982

Electrogammagraphy (EGG) was tested as a method for controlling the field in radiotherapy. After tests using formalin-fixed head phantoms, EGG was performed on 59 patients with malignant tumors of the larynx, esophagus, lungs, urinary bladder, colon, or female genital organs. EGG was performed with several different apparatuses. A lead sheet was used between the object and a selenium plate to ensure reproducible exposure times and prevent overexposure of the selenium plate. Positive and negative methods of image development were used. In phantoms and patients boundaries between air and soft tissues and between soft tissues and bone were clearly delineated. EGG of the thorax showed air-filled cavities distinctly and allowed demonstration of a tumor blocking the bronchial lumen. In EGG of the pelvis, positive EGG was better for the depiction of bone and negative EGG was better for the depiction of soft tissues. Paper imaging facilitated planning of radiotherapy. Positive imaging required higher radiation doses than negative imaging. The quality of the image was limited at source-to-object distances less than 75 cm. EGG allowed more precise planning of radiation doses than did conventional methods. Doses of radiotherapy were thus more effective, and radiation exposure of normal tissues was minimized. (5 Refs) (In GER)

53. METHODOLOGICAL APPROACHES TO INDIVIDUAL PLANNING OF MEGAVOLTAGE RADIOTHERAPY IN CANCER OF THE PANCREATODUODENAL REGION.

Pronin VI, Morozov AI, Rozanov IuL, Zverev MP, Prilepo VN
N. A. Semashko Medical Stomatological Inst., Moscow, USSR
Med Radiol (Mosk); 27(5):32-36 1982

Indications for high-energy radiotherapy in cancer of the pancreatoduodenal region are outlined, and results of the use of 25 million electron volts beta therapy in 12 men (39-68 yr old) with unresectable tumors are reported. During palliative surgery (formation of biliodigestive anastomosis), the patients were subjected to marking of the primary tumor and of regional metastases. Radiotherapy was started on day 25 after the palliative surgery: the patients received split-course irradiations from two opposite lateral fields (150-200 rads/day, 5x/wk, total dose 5,500-7,500 rads). At the time of report (12 mo later), all patients were alive. (13 Refs) (In RUS)

54. POSTOPERATIVE IRRADIATION OF CARCINOMA OF THE HEAD OF THE PANCREAS AREA. SHORT-TIME TOLERANCE AND RESULTS TO PRECISION HIGH-DOSE TECHNIQUE IN 18 PATIENTS.

Nguyen TD, Bugat R, Combes PF
(c/o Bugat) Dept. Therapeutic Radiology, Centre Claudius Regaud, 11, rue Piquemil, 31052 Toulouse Cedex, France
Cancer; 50(1):53-56 1982

During the period from January 1977-August 1979, 18 patients with biopsy-proven pancreas duct or ampullary adenocarcinoma with no distant or liver metastases underwent external beam radiation therapy following laparotomy. With the use of a 25 MEV photon beam and a four field 'box' technique, the dose delivered to the target volume identified with radio-opaque clips at laparotomy was 6,000 rad in 6 wk, while largely sparing the spinal cord, kidney, liver and gut. All patients subjected to low fat, gluten free diet completed treatment as planned without any acute reaction. Three patients developed delayed pancreatic insufficiency. According to actuarial survival analysis and low morbidity such an approach may lead to increased survival in patients with pancreatic cancer. (Author abstract) (13 Refs)

DRUG, HORMONAL, AND IMMUNOLOGIC THERAPY

55. TREATMENT OF ADVANCED EPIDERMOID CARCINOMA OF THE ESOPHAGUS WITH COMBINED 5-FLUOROURACIL, ADRIAMYCIN AND CIS-PLATINUM (FAP).

Gisselbrecht C, Calvo F, Mignot L, Pujade E, Bouvry M, Danne O, Belpomme D, Morvan F, Marty M
Service d'Oncologie Medicale, Hopital Saint-Louis, 2, place du Dr. A Fournier, F 75475 Paris Cedex 10, France
Nouv Presse Med; 11(24):1859-1862 1982

Twenty-one patients with advanced, inoperable epidermoid carcinoma of the esophagus were treated with combined 5-fluorouracil (F, 600 mg/m2, days 1 and 8), adriamycin (A, 30 mg/m2, day 1) and cis-platinum (C, 75 mg/m2, day 1), together with hydration and mannitol-induced diuresis. Each course was repeated after 4 wk. Response could be assessed in all 21 patients and was objective in 7 (33%), who had metastasis prior to treatment. Two of these seven patients went into complete remission confirmed by negative endoscopy and pathology; five showed partial response. Median survival of the 21 patients was 8 mo; it fell to 4.5 mo in non-responders and rose over 9 mo in responders. Three patients survived for more than 16 mo. No severe bone marrow depression or nephrotoxicity was observed. The three-drug combination appeared to be more effective than the additive effects of each drug given separately. It is concluded that the FAP regimen is useful in the treatment of advanced esophageal tumors. (Author abstract) (13 Refs) (In FRE)

56. CLINICAL EVALUATION OF THE ANTITUMOR BLEOMYCIN ANTIBIOTIC BLEOMYCETIN.

Manziuk LV, Perevodchikova NI
All-Union Cancer Res. Center, Moscow, USSR
Antibiotiki; 27(5):372-377 1982

Therapeutic efficacy of bleomycin A5 (bleomycetin: BM) was studied in 128 cancer patients (86 men, 42 women; 3-75 yr old). Among these patients, 1 had Stage I cancer, 1 had Stage II, 40 had Stage III, 75 had Stage IV, and 11 had tumor recurrence. Sixty-three of the patients received monochemotherapy with BM, 46 received polychemotherapy with BM, 1 received BM in combination with radiotherapy, and 18 received an intracavitary administration of BM. The monochemotherapy with BM (15-30 mg, iv, 2-3x/wk or daily; or 5 mg, im, tid) provided partial tumor regression in 9/11 patients with head and neck cancer, 7/12 with skin cancer, 2/10 with cervix cancer, 2/3 with cancer of the vulva, 5/10 with Hodgkin's disease, and 1/5 with lymphosarcoma, however, it was ineffective in the patients with osteogenic sarcoma, ovarian cancer, kidney cancer, rectal cancer, esophageal cancer, and leiomyosarcoma of the small intestine. The polychemotherapy with BM (daily dose 5-30 mg, total dose 45-600 mg, iv or im) was effective in 25/34 patients with testicular cancer, 1/3 with extragonadal teratoblastomas, 4/6 with penile cancer, 1/1 with ovarian lymphosarcoma, and 0/2 with lung cancer. The intracavitary administration of BM (15-50 mg/day, total dose 15-150 mg) was effective in 41.4% of the patients so treated. Side-effects of BM (fever, nausea and vomiting, hyperkeratosis, phlebitis, and thrombopenia) were observed in 69.5% of the patients. (5 Refs) (In RUS)

57. RANDOMIZED COMPARISON OF 5-FU ALONE OR COMBINED WITH MITOMYCIN AND CYTARABINE (MFC) IN THE TREATMENT OF ADVANCED GASTRIC CANCER.

Cocconi G, DeLisi V, Di Blasio B
Servizio di Oncologia, Ospedali Riuniti, 43100 Parma, Italy
Cancer Treat Rep; 66(6):1263-1266 1982

In a prospective randomized study, 53 patients with advanced gastric cancer previously untreated by chemotherapy were randomly assigned to treatment with 5-fluorouracil alone or combined with mitomycin and cytarabine (MFC). The response rate with MFC was higher (28%) than 5-FU alone (21%). The difference, however, was not statistically significant. Median response duration was practically identical with 5-FU (16-weeks) and MFC (17 weeks). There was no difference in median survival between the two groups (39 and 43 weeks, respectively). (Author abstract) (13 Refs)

58. ANTINEOPLASTIC CHEMOTHERAPY IN ADVANCED GASTRIC CANCER.

Tanneberger S
Zentralinstitut fur Krebsforschung, Lindenberger Weg 80, DDR-1115 Berlin-Buch, E. Germany
Arch Geschwulstforsch; 52(5):385-395 1982

The importance of chemotherapy in the treatment of gastric cancer lies in the fact that only 24.2% of cases are diagnosed in operable stages, and only 21.5% of operable patients survive longer than 5 yr. Antineoplastic chemotherapeutic agents that have some effect against gastric cancer include chlormethine, cyclophosphamide (CYC), carmustine, semustine, fluorouracil (FU), ftorafur (FF), and adriamycin (ADM). Reported remission rates for monochemotherapy range from 8% for CYC to 34.8% for chromomycin. Agents that have been effective against other cancers, but which have not been adequately studied in patients with gastric cancer, include methotrexate, vinblastine, vincristine, and cytarabine. Monochemotherapy in general produces remission in approx 25% of cases, with a duration of 8-12 mo at best. Polychemotherapy produces somewhat better results, with a remission rate of approx 40% overall. Most polychemotherapy regimens have been developed on an empirical basis. The most favored combinations of antineoplastic agents include FU, ADM, and mitomycin C. Combinations including ADM have had the greatest effect. Satisfactory results of chemotherapy have not been achieved. Further progress will require development of new agents, investigation of all agents that are effective in solid tumors, and development of polychemotherapy regimens on a scientific basis. New routes of administration, such as oral administration of FF, should be examined. (60 Refs) (In GER)

59. NEUTROPHIL-MEDIATED TUMOR CELL DESTRUCTION IN CANCER ASCITES.

Katano M, Torisu M
(c/o Torisu) Div. Clinical Immunology, Dept. First Surgery, Kyushu Univ. Sch. Medicine, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812, Japan
Cancer; 50(1):62-68 1982

Intraperitoneal injections of OK-432, originated from Group A streptococcus pyogenes of human origin, were administered to 77 patients with ascites caused by cancer of the digestive tract. Complete disappearance of effusion was observed in 43 cases, its reduction in 5 out of 77. They received cytologic examination of ascites daily before and after OK-432 injection. One of these patients, a 77-yr-old man with carcinomatous peritonitis due to gastric cancer, showed an interesting phenomenon after OK-432 injection. All adenocarcinoma cells in his ascites disappeared at least within 36 hr after OK-432 injection with increasing number of intraperitoneal neutrophils. In addition, neutrophils collected from his ascites or peripheral blood showed cytostatic effect on his ascites-derived tumor cells in vitro. His neutrophil-depleted intraperitoneal cells, however, had no significant effect on DNA synthesis of his tumor cells in vitro. OK-432 itself had no significant effect on DNA synthesis of his tumor cells in vitro. This report describes a patient in whom OK-432-induced neutrophils may play an important role in his tumor cell destruction in ascites. (Author abstract) (11 Refs)

60. CLINICAL EXPERIENCE WITH VENA CAVAL FILTERS IN HIGH-RISK CANCER PATIENTS.

Cantelmo NL, Menzoian JC, Logerfo FW, Fasulo G, Mozden PJ
Div. Surgery, Univ. Hosp., 75 East Newton St., Boston, MA, 02118
Cancer; 50(2):341-344 1982

Our experience with the placement of intracaval filter devices in patients with malignancies, is reviewed. Seventy patients had either a Mobin Uddin or Greenfield Umbrella Filter placed since 1971. The indications for caval interruption in our series included contraindication to anticoagulant therapy, bleeding with anticoagulant therapy, and recurrent pulmonary embolism with anticoagulant therapy. Of the 70 patients, 47 had a diagnosis of deep vein thrombosis, 15 had the diagnosis of pulmonary embolus, and 8 had the diagnosis of both deep vein thrombosis and pulmonary embolus. The types of malignancies that were present in our patients included breast carcinoma, gynecologic tumors, colon tumors, pancreatic carcinoma, and hematologic malignancies. We report no operative mortality and a low operative morbidity of 7% utilizing this method of caval interruption. The late morbidity of stasis sequelae following caval interruption was present in 14% of the patients. Based on a favorable experience with this method of vena cava interruption in high-risk patients with advanced malignancies, the authors suggest a more liberal indication for caval interruption in this group of patients. (Author abstract) (13 Refs)

SELECTED CLINICAL CORRELATIONS

61. CARCINOID SYNDROME FROM GASTROINTESTINAL CARCINOIDS WITHOUT LIVER METASTASIS.

Feldman JM, Jones RS
Duke Univ. Medical Center, Box 2963, Durham, NC, 27710
Ann Surg; 196(1):33-37 1982

Although patients with bronchial and ovarian carcinoid tumors can develop the carcinoid syndrome (diarrhea and/or flushing) in the absence of hepatic metastasis, it is believed that development of the carcinoid syndrome in patients with carcinoid tumors of gastrointestinal origin occurs only after the patient has hepatic metastasis. This is explained by hepatic inactivation of most of the serotonin in the portal circulation or by the fact that hepatic metastases are larger than the primary tumor in the gastrointestinal tract. Three patients with ileal and jejunal carcinoid tumors who developed the carcinoid syndrome without obvious hepatic metastasis are described. Two of the patients had intra-abdominal, but extrahepatic, metastasis that probably drained directly into the systemic circulation. The third patient had an ileal carcinoid with clinical involvement limited to adjacent mesenteric lymph nodes. Following resection of her tumor, her urinary 5-HIAA excretion and platelet serotonin level returned to normal, and her attacks of carcinoid flushing virtually ceased. She has occasional spells of 'blushing' that are thought to be benign; however, further close follow-up study will be needed to be certain that she is free of disease. It is suggested that each patient with the carcinoid syndrome be evaluated with CT and technetium-99 pertechnetate liver scans. If there is no liver involvement detected with these studies, one should consider hepatic arteriogram or laparotomy to determine if the patient's tumor might be totally resectable. (Author abstract) (13 Refs)

62. ADJUVANT PORTAL HEPATIC PERFUSION IN PATIENTS WITH COLORECTAL CARCINOMA: A SWISS MULTICENTER STUDY.

Metzger U, Aeberhard P, Egeli RA, Harder F, Largiader F, Muller W, Pettavel J, Weber W, Cavalli F
Chirurgische Klinik A, Universitatsspital, CH-8091 Zurich, Switzerland
Helv Chir Acta; 49(1/2):175-178 1982

The effectiveness of adjuvant portal hepatic perfusion (APHP) in preventing hepatic metastases was studied in approx 40 patients who had undergone complete resection of colorectal carcinomas. A venous catheter was placed in the portal vein via the umbilical vein or a mesenteric branch; the procedure was guided radiologically. Patients received 500 mg 5-fluorouracil (FU)/square meter (m2) of body surface area and 10 mg mitomycin C (MMC)/m2 by continuous perfusion. FU was given immediately after surgery and continuing over 7 days. MMC was given as a single dose on the day after surgery. The catheter was removed after 7 days. Twenty patients completed treatment according to plan. No complications occurred in association with implantation or removal of the catheter. APHP did not alter liver function or laboratory parameters or produce myelosuppression in any of the 20 patients. Wound healing was not affected by APHP. Early postoperative changes were more likely to result from surgery or general anesthesia than from APHP. Findings indicate the practical use of APHP in a multicenter study. A prospective, randomized, controlled study of APHP is now in progress. (5 Refs) (In GER)

63. TREATMENT OF ASYMPTOMATIC METASTATIC CANCER TO THE LIVER FROM PRIMARY COLON AND RECTAL CANCER BY THE INTRAARTERIAL ADMINISTRATION OF CHEMOTHERAPY AND RADIOACTIVE ISOTOPES.

Ariel IM, Padula G
137 East 36 St. Terrace, New York, NY, 10016
J Surg Oncol; 20(3):151-156 1982

Forty patients with asymptomatic metastatic cancer to the liver discovered at the time of laparotomy were treated by combined intrahepatic arterial chemotherapy and internal irradiation in the form of 90Yttrium microspheres. One group of 25 patients were treated by a catheter inserted at the time of operation and received 100 mCi; of 90Yttrium microspheres and 5-fluorouracil on a continuing basis. They survived an average of 26 mo (varying from 9 to 60 mo). The second series of 15 patients referred after surgery were treated by the percutaneous insertion of the catheter into the hepatic artery and received a bolus of combined chemotherapy consisting of Platinol, Methotrexate, and 5-fluorouracil. They survived an average of 31 mo, which varied from 12 to 60 mo. The dose of 100 mCi of 90Yttrium was well tolerated by the liver. Prospective studies are in progress, limiting the treatment to the internal irradiation to determine its precise role in the overall treatment of metastatic cancer to the liver. (Author abstract) (33 Refs)

REHABILITATION ASPECTS

64. IS TASTE RELATED TO ANOREXIA IN CANCER PATIENTS?

Trant AS, Serin J, Douglass HO
Dept. Nutrition, Foods and Dietetics, San Jose State Univ., Washington Square, San Jose, CA, 95192
Am J Clin Nutr; 36(1):45-58 1982

Intensity and pleasantness of five suprathreshold concentrations each of citric acid, NaCl, urea, and sucrose in beverages were scaled by 62 patients with primary tumors in upper gastrointestinal or thoracic areas, 22 of whom had chemotherapy within the month before testing. Mean intensity scores directly correlated with concentration of sour, salty, bitter, and sweet stimuli and indicated no abnormalities of test perception among patients grouped by tumor size, therapy, or appetite. In contrast, mean hedonic functions differed among individuals and groups. Patients on chemotherapy were less likely to display a distinct preference for any of the five concentrations of sucrose, particularly high levels, than those not on chemotherapy. Anorectics were more likely to prefer lower sweetness levels than nonanorectics, but sweet foods constituted a greater percentage of their daily caloric intake. Current theories for regulation of hunger and satiety were examined to elucidate the pathogenesis of anorexia in cancer patients. (Author abstract) (78 Refs)

65. ENDOSCOPIC INSERTION OF THE CELESTIN TUBE IN PATIENTS WITH ESOPHAGEAL CANCER.

Struve-Christensen E, Aasted A, Bertelsen S
Dept. Thoracic Surgery, Bispebjerg Hosp., DK-2400 Copenhagen NV, Denmark
World J Surg; 6(4):494-497 1982

In 26 patients with esophageal cancer the Celestin tube was inserted under television fluoroscopy and in 2 during exploratory thoracotomy. In 23 patients, the tumor was a primary esophageal malignancy, and in 5 the primary tumor was a malignant bronchogenic tumor invading the esophagus. In every patient the dilation and the placement of the tube was done without technical difficulties. After the procedure, seven patients complained of retrosternal pain which lasted for a few days. All the patients were able to take liquids 1-2 days after intubation. (13 Refs)

66. BILIARY AND GASTRIC DECOMPRESSION BY A TRANSHEPATIC TUBE TECHNIQUE.

Schaefer CJ, Geelhoed GW
(c/o Geelhoed) Dept. Surgery, George Washington Univ. Medical Center, 2150 Pennsylvania Ave., N.W., Washington, DC, 20037
Am Surg; 48(7):314-315 1982

A new technique is described for the decompression of the biliary tree with relief of gastric outlet obstruction for palliation of nonresected tumor in the porta hepatis. (Author abstract) (5 Refs)

67. PERCUTANEOUS TRANSHEPATIC BILIARY DRAINAGE FOR OBSTRUCTIVE JAUNDICE.

Faithfull GR, Smith RC, Manap NA
(c/o Smith), Concord Hosp., 2nd floor Clinic, Hospital Road, Concord NSW 2139, Australia
Med J Aust; 1(6):269-274 1982

Percutaneous transhepatic biliary drainage (PTBD) is a new but already well-recognized non-surgical method of overcoming extrahepatic biliary obstruction. It can be used as a temporary measure to improve the patient's general condition prior to high-risk operative surgery. It provides time for further investigation and, if the patient has an advanced malignancy, he can be offered long-term PTBD as the definitive palliative treatment. Thus surgery, with its high rates of mortality and morbidity in such patients, is avoided. In 10 cases preoperative PTBD reduced serum bilirubin (p less than 0.01), serum alkaline phosphatase (p less than 0.05), and lactic dehydrogenase (p less than 0.01) levels after 12 +-5 days, and resulted in minimal operative morbidity and mortality. Twelve patients with advanced malignancy had long term PTBD and three experienced good palliation for 12-14 months. (Author abstract) (no Refs)

68. NONSURGICAL MANAGEMENT OF EXTRAHEPATIC OBSTRUCTIVE JAUNDICE.

Kozarek RA, Sanowski RA
Veterans Admin. Medical Center, 7th St. and Indian School Road, Phoenix, AZ, 85012
Ann Intern Med; 96(6,part1):743-745 1982

Surgical decompression of extrahepatic biliary obstruction carries a significant risk of morbidity and mortality, depending on both the cause of the obstruction and the underlying medical status of the patient. Because of this risk, a number of nonsurgical therapies have been developed that offer an alternative to conventional surgical procedures. These new and still-evolving techniques, including endoscopic papillotomy, biliary stenting, balloon dilation, endoprosthesis insertion, and various T-tube manipulations, have become viable alternatives for decompressing the biliary tree in certain jaundiced patients. With the increasing use and dissemination of such procedures, primary care physicians should become aware of their availability as well as their indications and limitations. (Author abstract) (32 Refs)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

69. ASSOCIATION OF PORPHYRIA CUTANEA TARDA AND PRIMARY LIVER CANCER: REPORT OF TEN CASES.

Solis JA, Betancor P, Campos R, Enriquez de Salamanca R, Rojo P, Marin I, Schuller A
Departamento de Medicina, Servicio de Digestivo, Ciudad Sanitaria '1 de Octubre', Madrid-26, Spain
J Dermatol (Tokyo); 9(2):131-137 1982

Incidence of primary liver cancer was analyzed in 138 patients (135 males, 3 females) with porphyria cutanea tarda (PCT) who were clinically examined over a period of time varying from 40 days to 19 yr and was further compared with the incidence of the tumor in a group of 358 patients (238 males, 120 females) with hepatic cirrhosis without porphyria. Primary liver cancer was diagnosed in 10/138 PCT patients (7.2%; all male) and in 20/358 (5.6%; 16 males 4 females) nonporphyric cirrhotic patients. Results suggested that the high incidence of liver tumor in PCT is not merely related to hepatic cirrhosis. (38 Refs)

70. HEPATITIS B VIRUS AND PRIMARY HEPATOCELLULAR CARCINOMA: FAMILY STUDIES IN KOREA.

Hann HW, Kim CY, London WT, Whitford P, Blumberg BS
Inst. Cancer Res., Fox Chase Cancer Center, Philadelphia, PA, 19111
Int J Cancer; 30(1):47-51 1982

Chronic infection with hepatitis B virus (HBV) is closely associated with the etio-pathogenesis of primary hepatocellular carcinoma (PHC). It has been proposed that infection with HBV early in life, frequently transmitted by an HBV-carrier mother, leads to persistent infection with HBV, which in turn is associated with the development of chronic active hepatitis (CAH), post-necrotic cirrhosis and PHC. If this view is correct, then there should be clustering of chronic carriers of HBV in families of patients with chronic liver disease. We tested this hypothesis in Korea by collecting serum from 132 patients with these chronic liver diseases admitted to the Seoul National University Hospital and 664 of their first-degree relatives. Sera were assayed for hepatitis B surface antigen (HBsAg), antibody to HBsAg (anti-HBs) and antibody to hepatitis B core antigen (anti-HBc). Almost all cases showed evidence of present or past infection with HBV. Mothers of patients were more frequently HBsAg(+) than age-matched women in the control population or wives of patients. Five of 23 fathers were also HBsAg(+) compared with 1 of 25 age-matched controls. There was a deficit of anti-HBs in the fathers of cases compared with the controls. Siblings of patients were frequently HBsAg(+), with the highest prevalence in brothers. Family history shows that five fathers, two mothers and five brothers of cases have died of PHC. These data are compatible with the hypothesis tested and lend further support to the view that prevention of infection with HBV will lead to a marked decrease in the incidence of CAH, cirrhosis and PHC in areas where these diseases are endemic. Members of the families of patients with these diseases are at high risk of developing persistent infection with HBV and chronic liver disease. It would be appropriate to focus preventive strategies on infants and children in such families. (19 Refs)

71. GASTRIC CARCINOMA IN PATIENTS WITH UNOPERATED DUODENAL ULCER DISEASE.

Lewis JH, Woods M
Div. Gastroenterology, George Washington Univ. Sch. Medicine, 2150 Pennsylvania Ave., N.W., Washington, DC, 20037
Am J Gastroenterol; 77(6):368-373 1982

Gastric cancer may develop in the presence of active or chronic duodenal ulcer disease in the unoperated stomach. This association is considered rare, especially since the presence of a duodenal ulcer is believed to protect against the development of a gastric malignancy. In this review, we describe two patients in whom gastric cancer was diagnosed after a long history of duodenal ulcer disease. Also presented is a review of 236 additional cases from the literature. Patients with gastric cancer associated with duodenal ulcer disease tended to be younger than patients who develop gastric cancer not associated with duodenal ulcer. When compared to patients with gastric remnant (stump) cancer, the latency from onset of ulcer symptoms to the diagnosis of gastric cancer was shorter than the latency for stump cancer development, but the risk of developing stump cancer appears to be greater. The natural history and prognosis of this entity is otherwise similar to gastric cancer unassociated with duodenal ulcer and to stump cancer. A change in ulcer symptoms is an insensitive clue to the presence of gastric cancer in this group. The diagnosis may be delayed in some individuals whose gastric cancers respond to cimetidine or other agents. (Author abstract) (61 Refs)

72. HIGH RISK POPULATIONS AND PRECANCEROUS DYSPLASIA IN THE STOMACH: DEFINITION AND MANAGEMENT.

Potet F, Camilleri JP
Service d'Anatomie et Cytologie Pathologiques, Hopital Beaujon, F-92118 Clichy, France
Gastroenterol Clin Biol; 6(5):454-461 1982

Populations at high risk for developing gastric cancer include individuals with gastric ulcers, gastric polyps, Menetrier's disease, gastric stumps resulting from gastrectomy, or chronic gastritis. The frequency of gastric cancer developing in patients with gastric ulcers ranged from 1.1 to 3.8% in three studies; the frequency in patients with polyps ranged from 5.7 to 25% in 4 studies; the frequencies in patients with Menetrier's disease were 10% and 13.14% in two studies; the frequencies in patients who underwent gastrectomy were 1.4% and 3.10% in two studies; and in the one study reported on patients with chronic gastritis, the frequency of gastric cancer was 12%. For purposes of classification and precancerous assessment, it is suggested that only two grades of dysplasia, namely, moderate and severe, be retained. Management of high risk populations depends on the severity of the gastric dysplasia. Reexamination at 2 mo following the discovery of any grade of gastric dysplasia is recommended. With moderate dysplasia, another reexamination 1 yr following discovery is recommended, and, with severe dysplasia, endoscopic evaluation every 6 mo is necessary because of the increased risk of development of cancer. (61 Refs) (In FRE)

73. PANCREATIC CARCINOMA IN A TEN-YEAR SURVIVOR OF ACUTE MYELOBLASTIC LEUKEMIA.

McLaughlin P, Bennetts RW
Dept. Internal Medicine, M.D. Anderson Hosp. and Tumor Inst., 6723 Bertner Ave., Houston, TX, 77030
Med Pediatr Oncol; 10(3):295-300 1982

Adenocarcinoma of the pancreas developed in a young man who was a 10-yr survivor of acute myeloblastic leukemia (AML). His extensive cytotoxic chemotherapy for AML is reviewed along with a discussion of its possible oncogenic effects. Other case reports of second malignant neoplasms (SMN) following acute leukemia are cited; available data suggest that the overall risk of SMN in AML may be in the range of 6%. While our patient's second malignancy may have been a chance association, his and other cases of pancreatic carcinoma in young survivors of hematologic neoplasia suggest that the cytotoxic treatment may have had a role in the pathogenesis of the pancreatic carcinoma. (Author abstract) (33 Refs)

74. LIVER DISEASES DUE TO HORMONAL CONTRACEPTIVES.

Lie TS
Chirurgische Klinik und Poliklinik, Universitat, Sigmund-Freud-Str. 25, D-5300 Bonn 1, W. Germany
MMW; 124(20):489-494 1982

A review of hepatic diseases concerning the use of oral contraceptives shows a considerable increase in the incidence of benign hepatic tumors and precancerous conditions (adenoma, focal nodular hyperplasia and mixed benign tumors) since the introduction of oral contraceptives. Seventeen cases of malignant hepatic tumors (hepatocellular carcinoma in 16 and mixed tumor in 1) following the use of oral contraceptives for 1-11 yr were found in the literature. (82 Refs) (In GER)

75. GASTRITIS AS A RISK FACTOR IN CARCINOGENESIS: EPIDEMIOLOGICAL AND MORPHOLOGICAL FINDINGS.

Hellmann KL, Cuello C, Hoepker WW
Pathologisches Institut, Stadtische Krankenhaus Landshut, Robert-Koch-Str. 1, D-8300 Landshut, W. Germany
Leber Magen Darm; 12(3):115-121 1982

Gastric biopsies were performed on 239 persons from the district of Narino in Columbia. This district has an incidence of gastric cancer of 150/100,000, compared with an incidence of 40/100,000 in West Germany. Age and sex were determined for 159 of the persons and results of biopsies for these persons were compared with those for 159 Germans who were matched for age and sex. None of the persons selected for study had gastric cancer. The age-groups most represented were the 41-50-yr-old group for men and the 31-40-yr-old group for women. Gastritis without atrophy was found in 53% of the high-risk Columbian group and in 76% of the low-risk German group (controls). Atrophic gastritis of the antrum was found in 46% of the high-risk group and in 23% of the controls. Among patients with gastritis of the corpus, nonatrophic gastritis predominated in both groups; atrophic gastritis was present in 14% of the high-risk group and in 4% of the controls. The incidence of atrophic gastritis was independent of age in both groups. Histologic examination showed necrosis in the glandular neck region in 122 of the test subjects; 83.6% of these were high-risk patients and 16.4% were controls. Hyperplasia of the glandular neck region was found in 212 subjects, of whom 65% were high-risk and 34% were controls. Dysplastic changes occurred in 45% of the subjects studied, of which 88% were high-risk. Intestinal metaplastic lesions were found in 100 high risk patients and in 39 of the controls. Hyperplastic forms of metaplasia were found in 65 patients, of whom 80% were high-risk. The findings suggested that active, progressive gastritis may be a preliminary stage of the intestinal ('epidemiological') type of gastric carcinoma. (19 Refs) (In GER)

76. CANCERS OF THE DIGESTIVE TRACT, ALCOHOL AND TOBACCO.

Tuyns AJ, Pequignot G, Gignoux M, Valla A
International Agency for Res. on Cancer, 150, cours A. Thomas, 69372 Lyon Cedex, France
Int J Cancer; 30(1):9-11 1982

In a systematic search for risks associated with the consumption of alcohol and tobacco in relation to cancers of the digestive tract, esophageal cancer was found to be significantly related to both factors. There was a slightly elevated risk for rectal cancer among alcohol consumers as well as a lower risk for gastric cancer. With the exception of esophageal cancer, none of the other digestive tract cancers were found to be associated with tobacco consumption. (Author abstract) (17 Refs)

77. MUTAGENS PRODUCED BY THE PYROLYSIS OF OPIUM AND ITS ALKALOIDS AS POSSIBLE RISK FACTORS IN CANCER OF THE BLADDER AND OESOPHAGUS.

Malaveille C, Friesen M, Camus AM, Garren L, Hautefeuille A, Bereziat JC, Ghadirian P, Day NE, Bartsch H
(c/o Bartsch) Div. Environmental Carcinogenesis, International Agency Res. on Cancer, 150 cours Albert-Thomas, 69372 Lyon, Cedex 8, France
Carcinogenesis; 3(5):577-585 1982

Samples of opium pipe scrapings (opium dross, called sukhteh locally), but not of crude opium, collected in an area with a high incidence of esophageal cancer in north-east Iran, were shown to contain pro-mutagens, producing mostly frameshift mutations in Salmonella typhimurium strains TA1538 and TA98 after metabolic activation. Pyrolysis of opium and of its major alkaloid, morphine, yielded smoke condensates with mutagenic activities 10 and 100x higher, respectively, than that of the sukhteh samples tested. Heterocyclic aromatic hydrocarbons and primary aromatic amines present at different concentrations in these three pyrolysates are considered to be the major active principles. Opium addiction has been implicated as a risk factor in bladder cancer in humans and the ingestion of opium pyrolysates, in conjunction with dietary deficiencies, may be related to the high incidence of esophageal cancer in north-east Iran, although causality has not been established. (Author abstract) (29 Refs)

78. RELATIONSHIP OF SOYBEAN PASTE SOUP INTAKE TO GASTRIC CANCER RISK.

Hirayama T
Epidemiology Div., Natl. Cancer Center Res. Inst., 1-1, Tsukiji 5-chome, Chuo-ku, Tokyo, 104, Japan
Nutr Cancer; 3(4):223-233 1982

Daily intake of soybean paste soup was found to significantly reduce standardized mortality rates for gastric cancer in an ongoing large-scale prospective study of 122,261 males and 142,857 females aged 40 and above in 29 Japanese health center districts, 1966-1978. The gastric cancer standardized mortality rates were 171.9, 210.2, 240.0, and 255.9 per 100,000 males, and 77.8, 85.3, 97.5, and 113.6 per 100,000 females in daily, occasional, rare, and noningesters, respectively. These relationships remained significant when observed by age group, district, socioeconomic status, dietary pattern, and smoking habit. The risk-reducing effect has also been observed in case-control studies in the past, for both males and females and in urban and rural areas. This beneficial effect could arise from selected compounds such as protease inhibitors and/or other nutritious substances included in the soybean, but it is also possible that it merely reflects the effect of some frequent accompaniment to soybean paste soup, such as green-yellow vegetables. (Author abstract) (16 Refs)

79. MUTAGEN FORMATION AFTER THE ADDITION OF NITRITE TO NORMAL HUMAN GASTRIC JUICE.

Gatehouse DG, Tweats DJ
Genetic Toxicology Section, Histopathology Dept., Glaxo Group Res. Ltd., Park St., Ware, Hertfordshire, England
Carcinogenesis; 3(5):597-598 1982

The World Health Organization (WHO) has recently recommended the use of a simple in vitro test (Nitrosation Assay Procedure, NAP) to allow the ranking of orally administered drugs. It was suggested that the ranking of drugs should be carried out on a reactivity scale, according to their ability to nitrosate in the presence of high concentrations of nitrite at low pH (3-4). The present study was undertaken to investigate the effect of adding the concentration of nitrite recommended for the NAP test (40 mM) to normal fasting human gastric juice. The data clearly demonstrate that such treatment results in the formation of derivatives with specific mutagenic activity for the bacterium Salmonella typhimurium TA1537. This strain was recommended for use in the NAP Test. Although the NAP test may be valid for its original purpose, in the absence of more physiologically relevant data it is invalid for use as a final arbiter in risk-benefit assessments. The possible formation of mutagenic species as a result of the nitrosation of natural gastric secretions should be considered when any risk-benefit assessment is made. (Author abstract) (18 Refs)

80. MUTAGENICITY AND SYNTHESIS OF ALPHA-SUBSTITUTED N-NITROSAMINES: DERIVATIVES WITH DITHIOCARBAMIC ACID.

Pool BL, Bertram B, Wiessler M
Inst. Toxicology and Chemotherapy, German Cancer Res. Center, Im Neuenheimer Feld 280, 6900 Heidelberg, W. Germany
Carcinogenesis; 3(5):563-567 1982

Disulfiram (DSF) can considerably alter the organotropy of chemical carcinogens. For N-nitrosodimethylamine and for N-nitrosodiethylamine the organotropy is shifted from the liver to the nasal cavity or the esophagus, respectively. Whereas the influence of DSF or its metabolites on enzyme systems has been studied, little is known about its interaction with the carcinogens at a molecular level. Therefore, postulated reaction products of a series of alpha-hydroxylated N-nitroso-dialkylamines and dithiocarbamate were synthesized and tested for mutagenicity in Salmonella typhimurium TA 1535. The results show that the compounds conjugated at a primary alpha-C-atom are not mutagenic, whereas those conjugated at a secondary alpha-C-atom are active. The primary N-nitroso-dithiocarbamates represent unique examples of inactivated dialkyl-nitrosamine derivatives. In addition, their formation in vitro was indirectly demonstrated. The possible role these inactivated compounds may play during the DSF-modulation of carcinogenesis will be discussed. (Author abstract) (16 Refs)

81. CANCER AMONG BLACKS IN NEWARK, NEW JERSEY, 1970-1976. A NATIONAL AND INTERNATIONAL COMPARISON.

Thind IS, Najem R, Paradiso J, Fuerman M

Dept. Preventive Medicine and Community Health, New Jersey Medical Sch., Coll. Medicine and Dentistry, 100 Bergen St., Newark, NJ, 07103

Cancer; 50(1):180-186 1982

Newark black men had age-adjusted cancer rates comparable to those of Washington, DC, but lower than the other three American city blacks. Rates for Newark black women were generally similar to other American black women. American blacks, like those of Newark, had cancer rates higher than the African blacks in three out of four countries studied. Only blacks of Rhodesia had cancer experience like that of American blacks. Except for cancer of the cervix, the African blacks had generally lower rates compared to the American blacks for the 10 sites investigated. However, high rates did occur for certain sites, eg, esophagus and bladder cancers in Bulawayo, Rhodesia. Newark blacks also had higher rates for certain sites (prostate, lung, breast and cervix) compared to Washington, DC, and certain other US cities. Thus, the total risk of malignancies to develop among Newark blacks was no greater than that expected, based upon the four US cities' experience. (Author abstract) (39 Refs)

82. EPIDEMIOLOGY OF ESOPHAGEAL CANCER IN SAO PAULO, BRASIL.

Mirra AP, Pacheco de Souza JM, Gotlieb SL, Pastorelo EF, Bussacos MA, Da Motta Azevedo Correa MC, Haenszel W, Correa P

Departamento de Epidemiologia da Faculdade de Saude, Registro de Cancer de Sao Paulo, USP, Av. Dr. Arnaldo, 715, 01255 Sao Paulo, Brasil

Rev Saude Publica; 16(1):54-65 1982

The incidence by age, sex and birthplace of esophageal cancer in Sao Paulo in 1975 was compared with that of 1969, in the rest of Brasil and other countries. The Cancer Registry shows that of the 243 recorded cases of esophageal cancer in Sao Paulo in 1975, 200 were males and 43 were females. This is a male:female incidence ratio of 4.6. The other major Brazilian cities, Recife, Rio Janeiro and Fortaleza have a lower male:female incidence ratio: ranging from 1.6 to 3.3. The increased immigration into Sao Paulo from Portugal, Italy, Spain and Japan could contribute to this significant difference between Brazilian cities. The male:female ratio remains high for native citizens of Sao Paulo when birthplace is considered although the incidence rate is less overall for natives vs immigrants. There is a higher risk for immigrants to Sao Paulo of contracting esophageal cancer than for locally born citizens. This is also linked to age, those over 50 yr old, and sex, higher for males, for natives as well as immigrants. Therefore, the etiology can not be a general one of social structure, stress or malnutrition among immigrants. The increased risk factor for Sao Paulo as compared to the rest of Brasil and in some other countries must be due to something specific to the city of Sao Paulo. Future Cancer Registry information will include the date of arrival and length of stay in the city for immigrants and the exact birthplace for each cancer patient. (15 Refs) (In POR)

83. MORTALITY AMONG RUBBER WORKERS: V. PROCESSING WORKERS.

Delzell E, Monson RR

Duke Univ. Comprehensive Cancer Center, Durham, NC

JOM; 24(7):539-545 1982

Cause-specific mortality was evaluated among 2,666 men employed in the processing division of a rubber manufacturing plant. The division was divided into two sections: front processing (compounding, mixing and milling operations) and back processing (extrusion, calendering, cement mixing and rubberized fabrics operations). Mortality rates for all processing workers combined and for men in each section were compared with rates for US white males or for workers employed in other divisions of the same plant. Compared with either referent group, men in the processing division had increased mortality from leukemia, emphysema, and cancers of the stomach, large intestine, and biliary passages and liver. An excess number of deaths from stomach and large intestine cancer was found predominantly among men in the front processing section (33 observed vs 17.7 expected deaths, based on rates in nonprocessing workers). Increased mortality from leukemia (14 observed vs 7.3 expected) and from emphysema (22 observed vs 11.0 expected) was present among men employed in the back processing section. Examination of mortality from these causes according to age and the yr starting work, duration of employment, and yr since starting work in the relevant sections of the processing division suggested that observed excesses of stomach cancer, large intestine cancer, leukemia, and emphysema among processing workers are related to occupational exposures. These results are consistent with the findings of studies of other groups of rubber workers. (Author abstract) (20 Refs)

SELECTED PRE-CLINICAL STUDIES

84. DEVELOPMENT OF A TRANSPLANTABLE MODEL OF PANCREATIC DUCT ADENOCARCINOMA.

Townsend CM, Franklin RB, Gelder FB, Glass E, Thompson JC

Dept. Surgery, Univ. Texas Medical Branch, Galveston, TX, 77550

Surgery; 92(1):72-78 1982

We report here the first development of a continuous cell line in tissue culture of an animal pancreatic duct adenocarcinoma that is histologically similar to human pancreatic duct adenocarcinoma. A primary pancreatic duct adenocarcinoma, induced in a male Syrian golden hamster after 23 wk of weekly sc injections of N-nitrobis(2-hydroxypropyl)amine, was minced and injected sc into three hamsters. After 8 wk, a single tumor was apparent. Subsequent passages of fragments into the cheek pouches were performed at 3-to 4-wk intervals. After five passages, minced fragments of a tumor were placed in tissue culture. Colonies appeared by 7 days; an epithelioid cell line, without fibroblasts, was established by 60 days. Single-cell suspensions, injected into hamster cheek pouches or sc, produced tumors in a dose-dependent fashion. Spent culture medium of tissue culture cells and saline extracts of freshly excised tumors contained pancreatic oncofetal antigen-like activity. (Author abstract) (15 Refs)

85. AUTORADIOGRAPHIC STUDIES ON NUCLEIC ACID SYNTHESIS OF HUMAN GASTRIC CANCER CELLS. I. RELATIONSHIP BETWEEN NUCLEIC ACID SYNTHESIS OF CANCER CELLS AND CLINICOPATHOLOGICAL FINDINGS.

Inoue K
First Dept. Surgery, Kobe Univ. Sch. Medicine, Kobe, Japan
Nippon Geka Hokan; 51(2):315-326 1982

Surgical specimens were obtained from 22 patients (16 men, 6 women; 32-80 yr old) who had gastric cancer, and the rate of cell proliferation and cell viability of the cells in the central portion of 20/21 tumors were measured with the aid of in vitro 3H-thymidine and 3H-uridine labeling. Thymidine labeling indexes (TLI), uridine labeling indexes (ULI), and mitotic indexes were calculated based on the most active parts of the tumors. The overall TLI of all of the tumors wass 22.4 +-7.9% and the MI was 19.6 +-5.5%. TLI values were decreased in the tumors that were classified as advanced with respect to depth of tumor invasion and stage. No significant differences in TLI were observed between the primary tumor nest and metastatic lymph node tumor nests, av diameter of the primary tumor nest, macroscopic type of the tumors, presence or absence of lymph node metastasis, histological types, and type of infiltrative proliferation. TLI were lower for the scirrhotic type tumor than for the medullary type and were lower for tumors invading the subserosal and tunica muscularis propria layers than for those invading the mucosal layer. The overall ULI of all the tumors was 92.7 +-6.3%. While no consistent correlation was observed between the ULI and pathoclinical findings, RNA synthesis was adequately preserved even in cancer cells with decreased DNA synthesis. (44 Refs) (In JPN)

86. AUTORADIOGRAPHIC STUDIES ON NUCLEIC ACID SYNTHESIS OF HUMAN GASTRIC CANCER CELLS. II. EFFECTS OF 5-FLUOROURACIL ON NUCLEIC ACID SYNTHESIS OF CANCER CELLS.

Inoue K
Dept. Surgery, Kobe Univ. Sch. Medicine, 5-2 Kusunoki-cho, 7-chome, Chuo-ku, Kobe 650, Japan
Nippon Geka Hokan; 51(2):327-335 1982

Thirteen patients (9 men, 4 women; 39-73 yr old) who had gastric cancer were administered 150-300 mg/day (av total 3,100 mg) of 5-fluorouracil (5FU) preoperatively, and the changes in nucleic acid synthesis of the cancer cells were evaluated by autoradiography. Surgical specimens were labeled with 3H-thymidine and 3H-uridine, and thymidine labeling indexes (TLI), uridine labeling indexes (ULI), and mitotic indexes (MI) were calculated. The tumors were classified as Stage I (1 case), II (1), III (5), or IV (6). Compared to the TLI (22.4 +-7.45%) for 21 control subjects, that for the group administered the 5FU was significantly higher (31.8 +-11.8%). The MI for the 5FU group was not significantly different from that of the control group. The TLI increased with increasing dosage of the 5FU. Comparison of the two groups of patients with respect to stage indicated that the TLI of the Stage III and IV 5FU patients increased more than the TLI of the Stage I and II 5FU patients. According to histology of the tumor, markedly increased TLI were observed for the highly differentiated type tumors, and the TLI were higher in the cases with a high degree of histological variability than in those without histological variability. No significant difference was observed in the ULI between the control and 5FU groups. (26 Refs) (In JPN)

87. GASTRIN PROTECTION AGAINST CHEMICALLY INDUCED GASTRIC ADENOCARCINOMAS IN WISTAR RATS: HISTOPATHOLOGY OF THE GLANDULAR STOMACH AND INCIDENCE OF GASTRIC ADENOCARCINOMA.

Tatsuta M, YamamuraH, Taniguchi H, Tamura H
Dept. Gastrointestinal Oncology, Center for Adult Diseases, Osaka 3 3, Nakamichi 1-chome, Higashinari-ku, Osaka 537, Japan
JNCI; 69(1):59-66 1982

The effects of gastrin on the histopathology of the glandular stomach and on the incidence of gastric carcinoma induced by N-methyl-N'-nitro-N-nitrosoguanidine (MNNG) were investigated in inbred Wistar (W) rats. Prolonged administration of gastrin after treatment with MNNG significantly reduced the incidence of adenocarcinomas of the glandular stomach. In addition, atypical glandular proliferations were significantly less frequent and were smaller, and the incidence of marked mucosal atrophy was significantly reduced in both the antral and oxyntic gland mucosae. Both atypical glandular hyperplasia and mucosal atrophy are precursors of gastric cancers; prolonged administration of gastrin to rats after treatment with MNNG suppressed development of precursors of gastric cancer and so prevented development of gastric cancers. (Author abstract) (19 Refs)

88. GROWTH RESPONSES OF RAT STOMACH CANCER CELLS TO GASTRO-ENTERO-PANCREATIC HORMONES.

Kobori O, Vuillot MT, Martin F
(c/o Martin) Lab. Immunology and Experimental Medicine, INSERM U-45, CNR-ERA 628, Univ. Dijon, 7, Blvd. Jeanne-d' Arc, 21033 Dijon, France
Int J Cancer; 30(1):65-67 1982

Various hormones and peptides were added to rat stomach cancer cells growing in vitro in a serum-free medium and the cell number was determined by a spectro-photometric method. Five gastro-entero-pancreatic hormones or related peptides (tetragastrin, glucagon, secretin, cholecystokinin-pancreozymin and cerulein) significantly increased the number of stomach cancer cells from 150% to 310% of the number of control cells cultivated in a serum-free, hormone-free medium. On the other hand, insulin and vasoactive intestinal peptide, and other hormones (thyroxin, epinephrine, hydrocortisone, beta-estradiol, progesterone, testosterone), peptone broth and bovine serum albumin had no significant growth effect. All the active substances belong to the two major families of gastro-entero-pancreatic polypeptide hormones, suggesting the existence of hormone receptors at the surface of stomach cancer cells. (Author abstract) (10 Refs)

89. CHROMOSOMES OF HUMAN HEPATOMA CELL LINES.

Simon D, Aden DP, Knowles BB
Wistar Inst. Anatomy and Biology, 36th St. at Spruce, Philadelphia, PA, 19104
Int J Cancer; 30(1):27-33 1982

The karyotypes of three human hepatoma cell lines Hep G2, Hep 3B and PLC/PRF/5 were investigated by G-and C-banding techniques. In addition to ploidy changes, typical for most carcinoma cell lines, certain markers were found that remained stable throughout passage of these cultures. Chromosome 1 is involved in multiple translocations, resulting in at least three copies of the chromosome 1 heterochromatin region in each cell line. Inversion in the 9qh region is also seen. In addition, each of the cell lines consistently contains trisomy of 17q. The rearrangements of chromosome 1 are more striking in the Hep 3B and PLC/PRF/5 cell lines, which are derived from human hepatocellular carcinomas and contain integrated copies of the hepatitis B viral genome. These two cell lines are characterized by the presence of at least five copies of the 1 (p13 to q21) region that result from multiple deletions and/or translocations; by consistent trisomy and polymorphism of the 9qh region; and by trisomy of chromosome 10 (also involved in rearrangements). The Hep G2 and Hep 3B cell lines behave functionally as highly differentiated liver parenchymal cells and are karyologically distinguishable from PLC/PRF/5 both by the presence of trisomy of 6 (pter to q14) and by the finding that one of the homologues of chromosome 15 is 15q+. (Author abstract) (29 Refs)

90. BIOCHEMICAL AND IMMUNOCYTOCHEMICAL ANALYSIS OF THE INTERMEDIATE FILAMENT CYTOSKELETON IN HUMAN HEPATOCELLULAR CARCINOMAS AND IN HEPATIC NEOPLASTIC NODULES OF MICE.

Denk H, Krepler R, Lackinger E, Artlieb U, Franke WW
Div. Gastroenterologic and Molecular Pathology, Univ. Vienna, Spitalgasse 4, A-1090 Wien, Austria
Lab Invest; 46(6):584-596 1982

Cytoskeletons enriched in intermediate-sized filaments were isolated from neoplastic and non-neoplastic hepatocytes of murine and human liver as well as from human cholangiocellular carcinoma, using extractions in high salt buffers and Triton X-100, and were analyzed by immunofluorescence microscopy and by one- and two-dimensional gel electrophoresis. This study presents the first comparison of the cytoskeletal pattern of a human nonepidermal tissue and the corresponding carcinoma. Despite some minor but significant differences of electrophoretic mobilities of the major cytokeratin polypeptides present in rodent and human liver, their similar pattern on two-dimensional gel electrophoresis suggests a tissue or cell type-specific pattern in both species. Moreover, the results show that not only cytokeratins are continued to be expressed when hepatocytes become neoplastic but also that the hepatocyte-specific pattern of major cytokeratin polypeptides is maintained. (Author abstract) (45 Refs)

91. ESTABLISHMENT OF AN EXPERIMENTAL MODEL OF HUMAN HEPATOBLASTOMA.

Hata Y, Uchino J, Sato K, Sasaki F, Une Y, Naito H, Manabe K, Kuwahara T, Kasai Y
Hokkaido Univ. Sch. Medicine, N-14, W-5, Sapporo, Japan
Cancer; 50(1):97-101 1982

Establishment of xenografts or cell culture lines in which the alpha-fetoprotein (AFP) characteristic of clinical hepatoblastoma persists have been difficult. The serially transplantable strain (HB-3) of highly AFP-producing hepatoblastoma was successfully established in nude mice. And a highly AFP producing cell line (c-HB-3) is easily obtained by HB-3. This strain and line give us an ideal experimental model of hepatoblastoma in vivo and in vitro. (Author abstract) (7 Refs)

92. A HUMAN HEPATOMA CELL LINE (PLC/PRF/5) PRODUCES LUNG METASTASES AND SECRETES HBSAG IN NUDE MICE.

Sattler FR, Paolucci S, Kreider JW, Ladda RL
500 University Drive, Hershey, PA, 17033
Eur J Cancer Clin Oncol; 18(4):381-389 1982

PLC/PRF/5 is a human liver cancer cell line which synthesizes hepatitis B virus surface antigen (HBsAg). These cells produced tumor in 6 of 8 (75%) congenitally athymic nude mice at 13 of 28 subcutaneous injection sites and in 13 of 14 (93%) mice inoculated intraperitoneally. Tumors were successfully transplanted to four of six additional nude mice. Tumor growth was rapid. Growth of cephalad tumors was significantly greater than for caudal tumors (0.39 mm/day vs 0.28 mm/day). Microscopic examination of tumors showed moderately well-differentiated hepatocellular carcinoma. Foci of identical cells were present in pulmonary veins in 7 of 14 tumor-bearing animals. Tumor cell karyotype was identical with that of PLC/PRF/5 cells. In addition, HBsAg was detectable in high titer in animals with extensive tumor. Biological features of PLC/PRF/5-induced tumors in nude mice appeared to closely resemble human hepatocellular carcinoma. Moreover, HBsAg may provide a marker of tumor growth. (Author abstract) (24 Refs)

93. EFFECTS OF ANTIBODIES TO CHORIOGONADOTROPIN IN MALIGNANT GROWTH. II. SOLID TRANSPLANTABLE RAT TUMORS.

Kellen JA, Kolin A, Mirakian A, Acevedo HF
(c/o Acevedo) Dept. Lab. Medicine, Allegheny General Hosp., Pittsburgh, PA, 15212
Cancer Immunol Immunother; 13(1):2-4 1982

Effects of preimmunization against choriogonadotropin (CG) were studied in two transplantable solid neoplasms, the R 3230 AC rat mammary adenocarcinoma and the 5123 1-1 rat hepatoma which have been shown to synthesize CG-like material. R 3230 AC rat mammary adenocarcinoma was maintained in Fischer 344 female rats, and the 5123 1-1 rat hepatoma was maintained in Buffalo female rats. A conjugate of the beta-subunit of CG and tetanus toxoid (CGb-tt) was used for immunization and induction of CG antibodies. An av of 1.30 ug of the immunogen was injected sc in the interscapular area on days 0, 7, and 14; after the last injection, 14 days were allowed for optimization of the antibody production before implantation of the respective tumor. One of two con control groups was administered purified tetanus toxoid, approx 0.7 ug/injection, following the same schedule as with CGb-tt, while the other received saline only. After sacrifice, serum was tested for anti-CG antibodies with the use of the hCG-beta-RIA kit. The two control groups did not show any binding of 125I-hCG, while all animals immunized against CG had a significant titer of CG antibodies. Induction of anti-CG antibodies induced a significant reduction of tumor mass in all preimmunized animals for both tumor models. Tumor take after implant of 10 mg Stadie slices, however, was not prevented by preimmunization. Histopathology and growth pattern of the tumors were identical in all groups. Results demonstrated that immunization against CG has a definitive biological effect in transplantable solid tumors by significantly retarding the growth of the two tumor models. (16 Refs)

94. VITAMIN B6 KILLS HEPATOMA CELLS IN CULTURE.

DiSorbo DM, Litwack G
Oncology Res. Lab., Nassau Hosp., Mineola, NY, 11501
Nutr Cancer; 3(4):216-222 1982

Data are presented which indicate that vitamin B6 (pyridoxine) can retard and eventually kill Fu5-5 rat hepatoma cells in culture. Additional studies indicate that the human kidney cell line 293-31, and a rat glial cell strain, C6, display growth characteristics similar to those of hepatoma cells when cultured in 5 mM pyridoxine-supplemented medium. However, the pyridoxine-supplemented culture medium had little effect on the growth of the human mammary cancer cell line MCF-7. The resistance of the MCF-7 cells to growth inhibition by vitamin B6 suggests that the vitamer pyridoxine must be metabolized to pyridoxal before it can act as a growth inhibitor. These findings suggest the potential use of vitamin B6 as an antineoplastic agent. Possible mechanisms by which vitamin B6 promotes this effect are presented. (Author abstract) (35 Refs)

95. ISOLATION AND CHARACTERIZATION OF A NEW FUCOGANGLIOSIDE ACCUMULATED IN PRECANCEROUS RAT LIVER AND IN RAT HEPATOMA INDUCED BY N-2-ACETYLAMINOFLUORENE.

Holmes EH, Hakomori SI
Div. Biochemical Oncology, Fred Hutchinson Cancer Res. Center, Seattle, WA, 98104
J Biol Chem; 257(13):7698-7703 1982

A novel fucoganglioside has been found to be accumulated in the liver of rats fed N-2-acetylaminofluorene before development of hepatoma. This new fucoganglioside persisted in hepatoma in vivo but was completely absent in normal rat liver as well as in livers of rats fed the nonhepatic carcinogen, acetylaminophenanthrene, and a tumor promoter, trichloro-2,2-bis-(chlorophenyl)ethane. The ganglioside was isolated by high performance liquid chromatography and the structure was determined by methylation analysis, sequential degradation by various exoglycosidases, and by direct probe mass spectrometry of the permethylated derivative. This ganglioside, present in precancerous liver and in hepatoma in vivo, was identified as having a new structure with a substitution identical with blood group B determinant. A second fucoganglioside was detected in lower quantity in precancerous liver and in hepatoma in vivo but not in control tissue. This ganglioside co-migrated with the fucoganglioside isolated from H-35 hepatoma cells in vitro whose structure was identified as fucosylated GM1 ganglioside (Fucalpha1 to 2Galbeta1 to 4GalNAcbeta1 to 4 [NeuAcalpha2 to 3]Galbeta1 to 4Glcbeta1 to 1Cer). The results indicate that synthesis of new fucolipids is already induced at an early stage during the process of chemical carcinogenesis in rat liver which could be a unique membrane marker for diagnosis and therapy of a hepatoma and its premalignancy. (Author abstract) (45 Refs)

96. EFFECTS OF DIETARY AND IN VITRO 2(3)-T-BUTYL-4-HYDROXYANISOLE AND OTHER PHENOLS ON HEPATIC ENZYME ACTIVITIES IN MICE.

Rahimtula AD, Jernstrom B, Dock L, Moldeus P
Dept. Biochemistry, Memorial Univ. Newfoundland, St. John's, Newfoundland A1B 3X9, Canada
Br J Cancer; 45(6):935-944 1982

Six phenols [2(3)-t-butyl-4-hydroxyanisole (BHA), 2-t-butylphenol, 4-methoxyphenol, 4-methylmercaptophenol, t-butylhydroquinone and 2,6-di-t-butylphenol] previously shown to be inhibitors of benzo(a)pyrene-induced neoplasia, were examined for their ability to induce in vivo changes in hepatic mono-oxygenase and detoxication enzyme activities, and to act as monooxygenase inhibitors when added in vitro. (1) Generally it was found that cytochrome P450 levels were depressed, only 2,6-di-t-butylphenol caused a two-fold induction (2) Mono-oxygenase activities were significantly altered; BHA and 2,6-di-t-butylphenol caused microsomes to show substantial increases in aniline hydroxylase and peroxidase activities. These microsomes, along with 4-methoxyphenol microsomes, also showed a substantial reduction in DNA binding of benzo(a)pyrene (BaP) metabolites relative to metabolism. (3) Detoxication enzymes glutathione S-transferases and epoxide hydratase were readily induced, the order of effectiveness being: BHA approx = 2,6-di-t-butylphenol greater than 4-methoxyphenol greater than 2-t-butylphenol approx = 5-butylhydroquinone (4-methylmercaptophenol failed to induce). (4) In vitro ability to inhibit BaP metabolism and DNA-binding ability was: 2,6-di-t-butylphenol greater than or equal to BHA approx = 2-5-butylphenol greater than 5-butylhydroquinone greater than 4-methylmercaptophenol greater than 4-methoxyphenol. (5) Ability in vitro to discharge the activated oxygen complex of cytochrome P450 was: 2,6-di-t-butylphenol approx = 2-t-butylphenol greater than BHA greater than t-butylhydroquinone greater than 4-methylmercaptophenol greater than 4-methoxyphenol. The results are consistent with the theory that inhibition of neoplasia is related to inducibility of detoxication enzymes, though alterations in cytochrome P450 could play a significant role in some cases. (Author abstract) (39 Refs)

97. EFFECT OF MICROSOMALLY ACTIVATED AFB1 ON GGT ACTIVITY IN 3 RAT LIVER CELL LINES.

Manson MM, Green JA
M.R.C. Toxicology Unit, M.R.C. Lab., Woodmanstern Road, Carshalton, Surrey SM5 4EF, England
Br J Cancer; 45(6):945-952 1982

Three cell lines derived from adult rat liver have been used to study changes in levels of gamma-glutamyltransferase (GGT), a possible marker for premalignant transformation in liver in vivo. None of the cell lines was able to metabolize aflatoxin B1 (AFB1) and treatment with AFB1 alone did not influence GGT activity. However, treatment with microsomally activated AFB1 increased the level of activity in a cell line (BL8L) derived from normal liver with very low levels of GGT, by as much as 10-fold, and 5-fold in a cell line (ARL) also isolated from normal rat liver, but which had subsequently undergone spontaneous transformation. Microsomes from rats pretreated with phenobarbitone were compared with those from 3-methylcholanthrene-treated animals. AFB1 activated by the former produced larger increases in GGT activity, but in no case did the enzyme levels approach that in a cell line (JBI) derived from a hepatoma in the liver of an AFB1-fed rat. Treatment of JBI cells with microsomally activated AFB1 produced no further increase in activity. Histochemical staining indicated an uneven distribution of enzyme in all cell populations, both before and after treatment. This cell-culture system is useful for further studies on the role of GGT in carcinogenesis. (Author abstract) (26 Refs)

98. INHIBITION OF AFLATOXIN-INITIATED PRENEOPLASTIC LIVER LESIONS BY LOW DIETARY PROTEIN.

Appleton BS, Campbell TC
Div. Nutritional Sciences, Cornell Univ., Ithaca, NY
Nutr Cancer; 3(4):200-206 1982

The development of aflatoxin B1-induced hepatic preneoplastic lesions was significantly modified by varying the level of dietary casein fed to animals during the post-dosing period. Using gamma-glutamyl transferase staining to identify areas of cellular alteration, we observed that animals fed a 5% casein diet showed a 75% reduction in lesion development as compared to animals fed a 20% casein diet. Increasing the level of dietary casein from 20% to 40% produced no further increase in response. The results of study, showing an inhibition in the preneoplastic development by a reduction of dietary casein after aflatoxin dosing, suggest that low dietary casein inhibits the promotional phase of the ultimate neoplastic response. (Author abstract) (24 Refs)

AUTHOR INDEX WITH CITATION NUMBERS

Aasted A 65
Abate S 49
Acevedo HF 93
Acharya GS 1
Aden DP 89
Aeberhard P 62
Aeberhard P 7
Akasaka Y 9
Akovbiantz A 7
Anakhasian VR 2
Anderegg A 15
Antler AS 35
Apinis BK 5
Appleton BS 98
Ariel IM 63
Artlieb U 90
Atkocius V 52
Bartsch H 77
Bastatskii VG 2
Bayeli PF 6
Beal SL 41
Belpomme D 55
Benelli R 6
Bennetts RW 73
Bereziat JC 77
Bergan A 18
Bertelsen S 65
Bertram B 80
Betancor P 69
Blumberg BS 70
Bouvry M 55
Brady TM 39
Britsis FA 5
Brolsch C 20
Bron KM 48
Bugat R 54
Bundschu HD 14
Bussacos MA 82
Cadavid G 39
Calvo F 55
Camilleri JP 72
Campbell TC 98
Campos R 69
Camus AM 77
Canossi GC 24
Cantelmo NL 60
Castle WN 31
Cavalli F 62
Cho KJ 39
Cocconi G 57
Combes PF 54
Correa P 82
Csendes A 32
Cuello C 75
Da Motta Azeved 82
Danne O 55
Danzi M 49
Day NE 77
DeLisi V 57
Dekker A 48
Delzell E 83
Demidov GI 5
Denk H 90
Devi A 1
Deyhle P 7
Di Blasio B 57
DiSorbo DM 94
Diliz HS 48
Dobelbower RR 30
Dock L 96
Dohring W 20
Dolder A 7
Donegan JO 46
Douglass HO 37
Douglass HO 64
Duncan W 51
Egeli RA 62
Enriquez de Sal 69
Enterline H 38
Faithfull GR 67
Fajans SS 39
Fasulo G 60
Fechner RE 31
Fedorov VD 28
Fehr HF 7
Feldman JM 61
Ferrucci JT 25
Ferulano GP> 49
Feurle GE 40
Fischedick AR 17
Franke WW 90
Franklin GO 35
Franklin RB 84
Freitag G 52
Freitag J 52
Fresini A 49
Friesen M 77
Fritsch A 44
Fuerman M 81
Fujimoto S 9
Fujiwara K 22
Funovics JM 44
Gandolfo M 24
Garren L 77
Gatehouse DG 79
Geelhoed GW 66
Gelder FB 84
Ghadirian P 77
Gignoux M 76
Gilsanz Garcia 16
Gisselbrecht C 55
Glass E 84
Gluckman JL 46
Gonda H 4
Gotlieb SL 82
Gratz KF 20
Green JA 97
Greenberg BM 21
Greenberg IM 21
Greenberg M 21
Grigorov N 13
Gupta S 29
Gupta S 29
Gutz HJ 34
Haenszel W 82
Haertel M 17
Hakomori SI 95
Hammer B 7
Hann HW 70
Hansen HH 11
Harder F 62
Hata Y 91
Hautefeuille A 77
Hayashida Y 4
Heilmann KL 75
Helmstaedter V 40
Hemmingsson A 19
Hirayama T 78
Hirota N 27
Hochman RB 23
Hoepker WW 75
Holmes EH 95
Horiguchi M 27
Horn Y 41
Huang GJ 43
Hust W 14
Ido K 27
Inoue K 85
Inoue K 86
Ito Y 22
Iwasaku A 9
Iwatsuki S 48
Jacobson G 19
Jansa P 36
Jernstrom B 96
Jokinen K 26
Jones RS 61
Kairaluoma MI 26
Kano T 22
Karakousis CP 37
Karamfilova R 13
Kasai Y 91
Kasugai T 22
Katano M 59
Kato D 27
Kellen JA 93
Kerr GR 51
Kessler W 7
Kido C 22
Kidokoro T 4
Kim CY 70
Kimura K 27
Klempa I 40
Klimenkov AA 47
Knowles BB 89
Kobori O 88
Koischwitz D 11
Kolin A 93
Kolmannskog F 18
Kovalev AI 2
Kozarek RA 68
Kozhanov VV 50
Kramer S 30
Kreider JW 92
Krepler R 90
Kumagai K 4
Kuno N 22
Kurimoto K 22

Kuwahara T ... 91
Lackinger E ... 90
Ladda RL ... 92
Laganovskis AIa ... 5
Largiader F ... 62
Larsen S ... 18
Leoni A ... 24
Lewis JH ... 71
Lie TS ... 74
Lindgren PG ... 19
Litwack G ... 94
Liu JD ... 10
Lo KW ... 38
Logerfo FW ... 60
London WT ... 70
Lonnerholm T ... 19
Lorelius LE ... 19
Lubich WP ... 41
Lutz H ... 12
Maekawa K ... 4
Majewski A ... 20
Makhovskii VZ ... 2
Malaveille C ... 77
Mamcntov V ... 52
Manabe K ... 91
Manap NA ... 67
Manson MM ... 97
Manziuk LV ... 56
Marin I ... 69
Marincek B ... 17
Martin F ... 88
Martin Sanz A ... 16
Marton LJ ... 41
Marty M ... 55
Marzano LA ... 49
Matsuo K ... 8
McDonough J ... 46
McLaughlin P ... 73
Mechkov G ... 13
Menzoian JO ... 60
Metzger U ... 62
Miceli F ... 24
Mignot L ... 55
Mints IaV ... 28
Mirakian A ... 93
Mirra AP ... 82
Mitsuyoshi H ... 9
Mizuochi K ... 8
Moldeus P ... 96
Monson RR ... 83
Moreno Moraga J ... 16
Morozov AI ... 53
Morvan F ... 55
Moylan DJ ... 30
Mozden PJ ... 60
Mueller PR ... 25
Muhlethaler JP ... 7
Muller C ... 7
Muller RP ... 17
Muller W ... 62
Naito H ... 91
Najem R ... 81
Nakajima M ... 9
Nakano M ... 8
Nayak SK ... 1
Neff CC ... 25
Nerobeev AI ... 45
Newaishy GA ... 51
Nguyen TD ... 54
Niederle B ... 44
Nordgren CE ... 19
Obesc Fernandez ... 16
Ojala K ... 26
Otsuka S ... 8
Pacheco de Souz ... 82
Padula G ... 63
Panda K ... 1
Paolucci S ... 92
Paradiso J ... 81
Pastorelo EF ... 82
Pequignot G ... 76
Perevodchikova ... 56
Perini M ... 24
Perminova GI ... 2
Peter HJ ... 7
Petrova AS ... 34
Pettavel J ... 62
Pool BL ... 80
Porter DJ ... 39
Potet F ... 72
Preim D ... 14
Prilepo VN ... 53
Pronin VI ... 53
Pujade E ... 55
Rahimtula AD ... 96
Read GA ... 51
Reichel G ... 52
Riegrova D ... 36
Rigo GP ... 24
Rojo P ... 69
Roka R ... 44
Romagnoli R ... 24
Rosato EF ... 38
Rosch W ... 3
Rosenthal WS ... 35
Rottenberg WI ... 34
Rozanov IuL ... 53
Rubin JM ... 21
Sakai H ... 27
Sanowski RA ... 68
Sasaki F ... 91
Sato K ... 91
Sato T ... 22
Sato T ... 42
Sattler FR ... 92
Schaefer CJ ... 66
Schrumpf E ... 18
Schuller A ... 69
Schwegman C ... 38
Serin J ... 64
Shaw BW ... 48
Shields JJ ... 39
Simeone JF ... 25
Simon D ... 89
Smith RC ... 67
Smok G ... 32
Sokolov AA ... 2
Solis JA ... 69
Sorri M ... 26
Spigel L ... 41
Stalder GA ... 7
Starzl TE ... 48
Steenbeck L ... 34
Struve-Christen ... 65
Subrichina GN ... 34
Suchi T ... 42
Suzuki R ... 42
Suzuki Y ... 8
Takebayashi M ... 9
Takeuchi H ... 42
Tamura H ... 87
Tanaka Y ... 9
Tanehiro K ... 22
Taniguchi H ... 87
Tanneberger S ... 38
Tatsuta M ... 87
Telycenas A ... 52
Thelmo WL ... 35
Thiel DV ... 48
Thind IS ... 81
Tnompson JC ... 84
Thompson NW ... 39
Timofeev IuM ... 47
Torisu M ... 59
Torricelli P ... 24
Townsend CM ... 84
Trant AS ... 64
Tschistjakova O ... 34
Tseplite RK ... 5
Tsou KC ... 38
Tugarinov AI ... 28
Tuyns AJ ... 76
Tweats DJ ... 79
Uchino J ... 91
Umeda O ... 22
Une Y ... 91
Urabe M ... 4
Valla A ... 76
VanSonnenberg E ... 25
Vinik AI ... 39
Vorob'ev GI ... 28
Vuillot MT ... 88
Walach N ... 41
Wanebc HJ ... 31
Waterman PM ... 48
Weber W ... 62
Weiss H ... 34
Wenzel-Herzer G ... 40
Whitford P ... 70
Whittington R ... 30
Widgren S ... 7
Wiessler M ... 80
Wildner GP ... 34
Willen H ... 33
Willen R ... 33
Wittenberg J ... 25
Woods M ... 71
Woodtli S ... 7
YamamuraH ... 87
Yasuda K ... 9
Yasue M ... 22
Yuk A ... 38
Zhidovinov GI ... 50
Zverev MP ... 53

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-391-847:204

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CT19/82/12

NCI/ICRDB/CT19 82/12

PB82-939412

ICRDB CANCERGRAM

UPPER GASTROINTESTINAL TUMORS

Diagnosis, Treatment

SERIES CT19 No. 82/12

DECEMBER, 1982

This Cancergram is a service of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM of the U.S. National Cancer Institute. Every few weeks, an updated Cancergram containing abstracts of selected cancer-related articles recently published in more than 3000 journals, and dealing with the topic indicated by the above title, is sent to researchers working in this area. These researchers are identified on the basis of the description of their current research project that has been submitted to the ICRDB Program, directly or via granting agencies.

This Cancergram is prepared by the Cancer Information Dissemination and Analysis Center (CIDAC) for Diagnosis and Therapy *If this Cancergram is useful and valuable, please send your comments to the CIDAC address below, since future editions depend on user satisfaction and user needs:*

CIDAC FOR DIAGNOSIS AND THERAPY
M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE
6723 BERTNER AVENUE
HOUSTON, TX 77030

Consulting reviewer:
RICHARD G. MARTIN, M.D.
JOSEF K. KORINEK, M.D., Ph.D.

NEWARK PUBLIC LIBRARY
DEC 30 1982
U. S. GOVT. PUBS.
DEPOSITORY 376

In this issue:

- SCREENING AND DIAGNOSIS 1-2
- PATHOLOGY, STAGING, AND PROGNOSIS 3-9
- BIOCHEMICAL AND IMMUNOLOGIC MARKERS 10-22
- SURGICAL AND RADIATION THERAPY 23-28
- SELECTED CLINICAL CORRELATIONS 29-32
- REHABILITATION ASPECTS 33-34
- SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER 35-39
- SELECTED PRE-CLINICAL STUDIES 40-51

SCREENING AND DIAGNOSIS

1. A SUCTION-ABRASIVE CYTOLOGY TUBE FOR THE DIAGNOSIS OF ESOPHAGEAL CARCINOMA.

Ou Tim L, Leiman G, Segal I, Hamilton DG, Mannell A

Div. Gastroenterology, Univ. Alabama in Birmingham, University Station, Birmingham, AL, 35294

Cancer; 50(4):782-784 1982

A simple, easily constructed, and inexpensive suction-abrasive cytology tube was developed to study esophageal cytology. The reliability of this method for the diagnosis of esophageal carcinoma was evaluated in 101 patients. Of 47 patients with esophageal carcinoma, 93% were diagnosed correctly on exfoliative cytology. There were no false diagnoses of cancer. The cytology tube was well tolerated by all patients and provided a rapid and reliable method of diagnosis. As a screening procedure, this method may be applicable for widespread use to detect early esophageal cancer in high-risk populations. (Author abstract) (13 Refs)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service • National Institutes of Health • National Cancer Institute

HE20.3173/2:

2. DETECTION OF PANCREATIC TUMORS BY ULTRASOUND DURING SURGERY.

Sigel B, Coelho JC, Nyhus LM, Velasco JM, Donahue PE, Wood DK, Spigos DG

Dept. Surgery, Univ. Illinois Medical Center, PO Box 6998, Chicago, IL, 60680

Arch Surg; 117(8):1058-1061 1982

Real-time B-mode ultrasonic scanning was performed during 14 operations for pancreatic tumors. All operations were for adenocarcinoma, except in one patient with a Zollinger-Ellison tumor. The ultrasonic tissue appearance of pancreatic carcinoma was not specific. However, ultrasonic signs of pancreatic duct dilation, striction or invasion of the superior mesenteric veins, and common bile duct involvement may help to establish the diagnosis of malignancy. A triad of ultrasound signs indicative of malignant obstruction of the common bile duct consisted of (1) dilation, (2) absence of biliary stones, and (3) a distinctive termination pattern of the duct. Operative ultrasound was used to guide a biopsy needle to obtain pancreatic tissue samples. The Zollinger-Ellison tumor of the pancreas produced a sonolucent appearance that clearly distinguished it from the surrounding tissue. (Author abstract) (4 Refs)

PATHOLOGY, STAGING, AND PROGNOSIS

3. CLINOCOPATHOLOGICAL STAGING OF GASTRIC ADENOCARCINOMAS (MEETING ABSTRACT).

Fielding JW, Ellis DJ, Jones BG, Roginski C, Powell J

Department of Surgery, University of Birmingham, Birmingham, England

British Association of Surgical Oncology Summer Meeting, July 15-16, 1982, Portsmouth, England British Association of Surgical Oncology; 1982

Twelve thousand and seven hundred and fifty-four patients with gastric adenocarcinoma were studied in order to assess the TNM (tumor, node, metastasis) Staging. In Stages I, II and III the surgical resection was 'curative', in Stage IVA the resection 'palliative', and in Stage IVB no resection has been undertaken. The histological depth of penetration of the primary and lymph node involvement have been defined. The depth of penetration in Stage I was either mucosal or submucosal. In Stage II the muscularis propria or serosa was involved. There was no lymph node involvement in either of these stages. In Stage III the local lymph nodes were involved. Using this system it has been possible to stage 12,362 (96.9%) cases. There were 88 Stage I, 803 Stage II, 1344 Stage III, 803 Stage IVA and 9324 Stage IVB patients: an incidence of 0.7%, 6.3%, 10.5%, 6.3% and 73.1% respectively. The adjusted survival at 5 years in Stage I was 72.2%, Stage II 29.4%, Stage III 9.0%, Stage IVA 1.8% and for Stage IVB 0.8%. The respective 10-year adjusted survival rates were 67.7%, 24.7%, 6.2%, 1.6% and 0.0%, demonstrating only small reductions from the 5-year figures. This easily applied staging system is particularly relevant for evaluating current therapy and prognosis, defining groups that might benefit from non-surgical therapies and for permitting valuable international studies. (no Refs)

4. CHANGES IN THE LOCATION AND TYPE OF GASTRIC ADENOCARCINOMA.

Antonioli DA, Goldman H
Dept. Pathology, Beth Israel Hosp., 330 Brookline Ave., Boston, MA, 02215
Cancer; 50(4):775-781 1982

To document our impression of major changes in aspects of gastric adenocarcinoma, were reviewed and compared 62 consecutive cases from 1975 through 1978 and 31 cases from 1938 through 1942. The average age at diagnosis increased from 58 to 68 years, the male to female ratio decreased to approximately 1:1, and carcinomas composed predominately (50% or more) of signet-ring cells (SRC) increased from 9 to 39% of the total cases. In the recent series, carcinomas with SRC (compared with those without SRC) occurred 9 years earlier, were more frequent in women, were located distally, and had an infiltrative growth pattern. Carcinomas originating in the proximal stomach (cardia) were not noted in the old series but formed 27% of the recent cases. These tumors showed a male predominance, contained SRC less often, and were less commonly associated with chronic gastritis. The implications of these observations are discussed. (Author abstract) (31 Refs)

5. POLYPOID LESIONS OF THE STOMACH: MORPHOLOGY AND CLINICAL COURSE.

Ichikawa M, Kino I, Takagi K, Obata M, Sakamoto K, Nakazawa M, Iwata S, Ashizawa S, Mochizuki N
Natl. Cancer Center, Tokyo, Japan
I To Cho; 17(4):414-426 1982

Various topics concerning polypoid lesions of the stomach were discussed. The topics included the definition of a 'polypoid lesion', definition of 'hyperplastic gastric polyp', the clinical course of hyperplastic polyps, rapid pathological changes of the lesions, carcinogenic transformation of hyperplastic polyps, effectiveness of polypectomy for lesions greater than 2 cm, neoplasia of hyperplastic polyps, border lesions (IIa-subtype atypical epithelium), controversy over the use of the term 'IIa-subtype', Group III lesions and atypical epithelial nests, and carcinogenic transformation of atypical epithelial nests. (no Refs) (In JPN)

6. THE PROGNOSTIC SIGNIFICANCE OF WEIGHT LOSS AND ITS INTEGRATION IN STAGE-GROUPING OF OESOPHAGEAL CANCER.

Pedersen H, Hansen HS, Cederqvist C, Lober J
Radium Center, Finsen Inst., Copenhagen, Denmark
Acta Chir Scand; 148(4):363-366 1982

One hundred sixty-six patients suffering from esophageal cancer were subdivided into two groups with respect to wt loss. Survival of patients with less than or equal to 10% wt loss was significantly longer than in patients with greater than 10% wt loss. Within the group with less than or equal to 10% wt loss, patients in initial poor physical condition who improved on parenteral nutrition did as well as those in a spontaneously good condition. One hundred and fifty-nine could be stage-grouped according to the UICC classification. This classification did not give a clear-cut stratification with respect to survival. If the patients were reclassified into three stages in a system combining UICC stages with degree of wt loss, significant differences in survival between the individual stages could be obtained. It is recommended that the degree of wt loss is integrated in the stage-grouping of esophageal cancer. (Author abstract) (7 Refs)

7. FACTORS INFLUENCING A PROGNOSIS OF EARLY GASTRIC CANCER WITH SUBMUCOSAL INVOLVEMENT.

Takagi K, Oota H
Dept. Surgery, Cancer Inst. Hosp., Tokyo, Japan
I To Cho; 17(5):485-495 1982

Factors that might influence prognosis in cases of early gastric cancer were studied by macro- and microscopic examination of 406 cases of early gastric cancer. Depth of submucosal (sm) invasion was divided into three types as follows: minute infiltrative (MI) Type, deep infiltrative (DI) Type, and moderate infiltrating (MOI) Type. Among the 406 cases, the frequency of each type of tumor was approximately the same, while the 5-yr survival rate of the patients with DI Type cancer was 80% compared to 95% for MI and 94% for MOI, indicating that the prognosis was poorer with increased depth of invasion. According to type of early stage cancer, DI Type invasion was observed more often in patients with Type I or IIa + IIc cancer than in those with other types of early gastric cancer. Prognosis was also poorer among the patients with Type I and IIa + IIc cancer. Patients with Type I cancer with DI Type invasion had high frequency of recurrence of liver metastasis, had lesions greater than 4 cm, and had lymph node metastasis. Prognosis of Type IIa cancer with DI Type invasion was good. Recurrence was observed often in patients with Type IIa + IIcc cancer with DI Type invasion and lymph node metastasis. Type IIc + III cancers showed prognostic factors somewhat different from the other types of early gastric cancer. (10 Refs) (In JPN)

8. FACTORS INFLUENCING SURVIVAL IN PATIENTS WITH CANCER OF THE STOMACH. A MULTIVARIATE ANALYSIS.

Soreide O, Lillestol J, Viste A, Bjerkeset T
Dept. Surgery, Univ. Bergen, Haukeland Hosp., Bergen, Norway
Acta Chir Scand; 148(4):367-372 1982

Two hundred and seventy-four patients with gastric malignancy treated during 1972-1977 have been studied with respect to survival patterns and life expectancy. The crude median survival time for the whole group of patients was 6 mo, while 13% survived for a period of 5 yr. The stage of disease, the type of operation and age of the patient were all found to be significantly associated with survival time, whereas postoperative complications were not. No difference in survival was found between patients treated with resection and those treated with total gastrectomy. As several factors influence survival, we have studied in detail the survival patterns and life expectancy for a given combination of stage of disease, type of operation and age of the patient using a statistical model given by Cox. In contrast to the crude life expectancy of 6 mo for the whole group of patients, we found that life expectancy varied from 25 mo for patients of age 60, localized tumor, treated with resection, to 2 mo for patients of age 80, tumor with distant metastases and upon whom an exploratory or palliative procedure was performed. We conclude that if survival data is to be used for a prospective patient, we need statistical models which give survival patterns for a given combination of patient characteristics. Using such a model, we have found that there is no difference in survival patterns for patients treated with resection and those treated with total gastrectomy. However, as we have used relatively broad categories within each variable, similar analysis should be performed using more detailed staging systems. (Author abstract) (13 Refs)

9. PROGNOSTIC FACTORS OF 28 LEIOMYOSARCOMAS OF THE SMALL INTESTINE.

Chiotasso PJ, Fazio VW
(c/o Fazio) Dept. Colon and Rectal Surgery, Cleveland Clinic Foundation, 9500 Euclid Ave., Cleveland, OH, 44106
Surg Gynecol Obstet; 155(2):197-202 1982

Leiomyosarcoma of the small intestine is a rare tumor, comprising 0.2% of all malignant tumors of the gastrointestinal tract. The charts of 28 patients were reviewed; the outstanding characteristics were a slow growing, but sometimes, fast growing locally malignant lesion, more than half being in the ileum. Arteriograms are better than a roentgenographic series of the small intestine for diagnosis. Adjuvant therapy is probably of no benefit. Between histologically benign leiomyomas and malignant leiomyosarcomas, there is a third group with histologic manifestations of malignancy and good prognosis, 7 of 10 patients surviving to 5 yr. To define this group, we need an association of these three factors, duration of symptoms for more than 1 yr, no metastasis and a tumor diameter of less than 9 centimeters. (Author abstract) (8 Refs)

BIOCHEMICAL AND IMMUNOLOGIC MARKERS

10. IDENTIFICATION OF CARCINOEMBRYONIC ANTIGEN (CEA) IN BILE OF PATIENTS WITH MALIGNANT BILIARY TRACT DISEASE.

Konomi K, Nakamura K, Tobimatsu M, Saito S, Toyoda K, Yasunami Y
Dept. Surgery I, Kyushi Univ., Faculty Medicine, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812, Japan
Jpn J Surg; 12(3):184-190 1982

Diagnostic efficacy of determination of bile levels of carcinoembryonic antigen (CEA) was studied in 12 patients with cholelithiasis (6 men, 6 women; 32-77 yr old); 19 with liver, bile duct, or gallbladder cancer (9 men, 10 women; 45-77 yr old); and 7 with cancer of the head of the pancreas or the duodenal ampulla (6 men, 1 woman; 38-69 yr old). Bile samples were obtained from biliary tract drainage (the av period of sampling after drainage was 14.7-22.3 days in patients with benign lesions, 19.4 days in patients with hepatobiliary neoplasms, and 33.4 days in patients with cancer of the head of pancreas or duodenal ampulla). The av CEA levels in the bile from the patients with benign lesions, hepatobiliary neoplasms, and cancer of the head of the pancreas or duodenal ampulla were 13.1, 7.6, and 8.8 nanog/ml, respectively. The corresponding serum CEA levels were 2.0, 3.3, and 2.5 nanog/ml. It was concluded that determination of bile CEA levels is more useful in differential diagnosis of hepatobiliary neoplasms than serum CEA levels. (19 Refs)

11. DETECTION OF CARCINOEMBRYONIC ANTIGEN (CEA) IN GASTRIC MUCOSA BY A MONOCLONAL ANTIBODY (MEETING ABSTRACT).

Jones BG, Woodhouse CS, Stokes H, Ford CH, Corvalan J, Thompson H, Fielding JW
Surgical Immunology Unit, University of Birmingham, Birmingham, England
British Association of Surgical Oncology Summer Meeting, July 15-16, 1982, Portsmouth, England British Association of Surgical Oncology; 1982

The presence of CEA in paraffin sections of gastric biopsies from patients undergoing diagnostic endoscopy was studied by an immunoperoxidase technique and related to pathological findings. A monoclonal antibody raised to CEA purified from liver metastases of a colonic adenocarcinoma and which does not cross-react with non-specific cross-reacting antigen (NCA) was used for localization. A total of 120 evaluable biopsies were obtained from 66 patients. Biopsies were classified by a single histologist into normal, mild gastritis, moderate gastritis, intestinal metaplasia and carcinoma groups. Frequency of CEA expression based on the diagnosis of individual patients was 10/20 (50%) patients in the 'normal' group, 22/28 (79%) with mild gastritis, 10/10 (100%) with moderate gastritis, 2/2 (100%) with intestinal metaplasia and 5/6 (83%) with cancer (8/9 (89%) including carcinomas from other sources). Of the 120 biopsies; 21/44 (48%) normal biopsies were CEA positive, 36/50 (72%) showing mild gastritis were positive, 15/15 (100%) showing moderate gastritis were positive, 3/3 (100%) showing intestinal metaplasia and 7/8 (88%) carcinoma biopsies were positive. In normal gastric mucosa and gastritis biopsies staining was usually confined to the surface epithelium, while in intestinal metaplasia cells lining the upper half of the crypts were also positive. This demonstrates an increased frequency, and perhaps a change in site, of expression of CEA associated with pathological changes of the gastric mucosa. (no Refs)

12. LYSOZYME IN HUMAN GASTRIC CARCINOMA: A RETROSPECTIVE IMMUNOHISTOCHEMICAL STUDY.

Tahara E, Ito H, Shimamoto F, Iwamoto T, Nakagami K, Niimoto H
Dept. Pathology, Hiroshima Univ. Sch. Medicine, Kasumi 1-2-3, Minami-ku, Hiroshima 734, Japan
Histopathology; 6(4):409-421 1982

The frequency of lysozyme in each type of gastric carcinoma, the sources of lysozyme in tumor cells, and the prognosis of gastric carcinoma containing lysozyme were studied in using tissue samples from 69 cases of advanced cancer and 102 cases of early cancer classified according to the histological types of Japanese Research Society for Gastric Cancer. The immunoglobin enzyme bridge technique was used to localize lysozyme. No statistically significant differences could be demonstrated in the frequency of lysozyme immunoreactive cells not only between advanced and early cancer cases, but among the four histological types. Of the 65 tumors containing lysozyme-immunoreactive cells, there was mucin production in 40; neutral mucin in 17, sialomucin in 4, sulfomucin in 3 and both neutral and acid mucin in 16. Gastric carcinoma with lysozyme-immunoreactivity had a tendency to have a worse prognosis than that of gastric cancer without lysozyme-immunoreactivity, but the difference was not statistically significant. Tumor cells containing lysozyme were found in approx 38% of the gastric cancer cases. The lack of differences between lysozyme-containing tumors and others in histology or extent of infiltrative growth suggests that the presence of lysozyme in gastric cancer is not rare, and occurs even at an early stage of growth. Any possible relationship between tumor cell lysozyme and prognosis in early gastric cancer remains to be elucidated. (20 Refs)

13. SERUM ACTIVITIES OF LYSOSOMAL ENZYMES IN PATIENTS WITH LIVER CELL CARCINOMA.

Nagasue N, Inokuchi K, Kanashima R
Dept. Surgery, Hiroshima Red Cross Hosp., Hiroshima 730, Japan
Dig Dis Sci; 27(5):454-458 1982

Serum activities of two lysosomal enzymes, beta-glucuronidase and acid phosphatase, were estimated in 66 patients with liver cell carcinoma, 10 with secondary liver cancer, 14 with cirrhosis of the liver, and 9 normal controls. A substantial increase in the enzyme activities was found in patients with liver cell carcinoma but not in those with secondary liver cancer. The degree of the enzyme elevations paralleled the stage of hepatoma. Although the serum activities of both enzymes were also elevated in patients with liver cirrhosis, the elevations were significantly higher in hepatoma than in liver cirrhosis. Possible mechanisms for the elevation of serum lysosomal enzyme activities in hepatoma are discussed, but further studies are necessary to elucidate the biological and clinicopathological significance of estimating serum lysosomal acid hydrolases in patients with primary liver cell carcinoma. (Author abstract) (24 Refs)

14. CHORIOCARCINOMATOUS CHANGE WITH IMMUNOCYTOCHEMICALLY HCG-POSITIVE CELLS IN THE GASTRIC CARCINOMA OF THE MALES.

Mori H, Soeda O, Kamano T, Tsunekawa K, Ueda N, Yoshida A, Fukunishi R
Dept. Pathology, Osaka Univ. Sch. Medicine, Kitaku, Osaka 530, Japan
Virchows Arch [Pathol Anat]; 396(2):141-153 1982

Gastric choriocarcinoma is a rare tumor and attracts interest because of its controversial pathogenesis. The present study reports a choriocarcinomatous change with immunocytochemically hCG-positive cells in the gastric carcinoma. The patients were males, one was 41 yr old and the other 42 yr old. The tumor of both cases consists of adenocarcinoma and choriocarcinoma. A sequential process of morphological transition of the adenocarcinoma to the choriocarcinoma can be traced. Indirect immunoperoxidase stain (PAP method) for human chorionic gonadotropin (hCG) demonstrates the localization of hCG in the syncytiotrophoblasts. Small number of cytotrophoblasts are weakly positive. None of the components of adenocarcinoma of both cases is positive for hCG. Human placental lactogen is not demonstrated in both cases. Stain for pregnancy specific beta-1 glycoprotein is weakly positive in the adenocarcinoma of one case but not in the choriocarcinoma. In one case, the concentration of hCG was 19.9 mIU/ml in the preoperative serum and decreased to 1.2 mIU/ml after gastrectomy. HCG production by gastric carcinoma was discussed with regard to possible pathogenesis of gastric choriocarcinoma. (Author abstract) (23 Refs)

15. MIXED ENDOCRINE TUMOR WITH ATYPICAL VERNER-MORRISON SYNDROME: DISSOCIATED RESPONSES TO SOMATOSTATIN INFUSION AND SURGERY.

Rigaud D, Cerf M, Ou-yan C, Arrago J, Accary J, Chayvialle J, Rene E, Bonfils S
Service de Gastroenterologie, Hopital Bichat, 46, rue Huchard, F-75877 Paris, France
Gastroenterol Clin Biol; 6(6/7):563-569 1982

A case of a multiple endocrine tumor secreting vasoactive intestinal peptide (VIP), gastrin, and pancreatic polypeptide (PP) in a 52-yr-old woman is reported. Concentrations of the secreted hormones were measured following challenge by somatostatin, atropine, and secretin. Peripheral plasma concentrations of VIP, gastrin, and PP initially decreased during somatostatin infusion, but a rebound effect was observed with increased fecal output and levels of VIP which exceeded the initial level. Atropine inhibited PP secretion, but secretin and test meal stimulated PP secretion. Gastrin and VIP did not respond to atropine, secretin, and test meal stimulation. Following incomplete tumor excision, VIP plasma levels returned to normal, and plasma gastrin and PP levels were reduced by 70% and 50% respectively. Results of the above tests suggest that a dissociated response of hormonal secretions to various challenges may be characteristic of Verner-Morrison syndrome. (26 Refs) (In FRE)

16. PERCUTANEOUS TRANSHEPATIC VENOUS SAMPLING OF GASTRIN: VALUE IN SPORADIC AND FAMILIAL ISLET-CELL TUMORS AND G-CELL HYPERFUNCTION.

Glowniak JV, Shapiro B, Vinik AI, Glaser B, Thompson NW, Cho KJ
(c/o Vinik), Univ. Hosp., SACB 2226, Ann Arbor, MI, 48109
N Engl J Med; 307(5):293-297 1982

The value of transhepatic venous sampling was assessed in eight patients (6 women, 2 men; 23-59 yr old) by attempting to identify the origin of gastrin hypersecretion. Five patients had multiple endocrine neoplasia type I, two had single sporadic gastrinomas, and one had G-cell hyperfunction. In all cases studied, gastrin responses to secretin were abnormal; one patient had a borderline elevated response, but was subsequently shown to have G-cell hyperfunction. Patients with multiple endocrine neoplasia type I differed in the site of maximal gastrin concentration; two patients had high levels in veins draining the head of the pancreas, one exhibited diffuse hypergastrinemia, and various other locations were indicated in three others. Patients with solitary tumors differed in the locations of highest gastrin concentrations. In multiple endocrine neoplasia type I, transhepatic venous sampling is generally unhelpful in treatment because of the multiple sites of origin of gastrin hypersecretion. In sporadic tumors the technique may indicate that the tumor is localized, and may allow cure by surgical excision. In the patient with G-cell hypersecretion, transhepatic venous sampling localized hypersecretion to the antrum, suggesting appropriate surgery. (18 Refs)

17. INTESTINAL MICROFLORA AFTER SURGERY FOR STOMACH CANCER.

Dronova OM, Laktionova AI
All-Union Cancer Res. Center, Moscow, USSR
Lab Delo; (6):358-361 1982

The state of intestinal microflora was evaluated in 49 patients subjected to radical surgery for stomach cancer. The patients were examined within 3-22 mo after the surgery. Analysis of specimens of feces showed marked changes in species composition of intestinal microflora in 96.1% of the patients (decreased counts or absence of bifid bacteria and lactobacteria and increased counts of Escherichia coli and Enterococcus). (14 Refs) (In RUS)

18. BEHAVIOR OF ANTITHROMBIN III, DETERMINED AS PROTEIN CONCENTRATION AND BIOLOGIC ACTIVITY, IN SUBJECTS WITH NEOPLASTIC DISEASE.

Pengo V, Guerra C, Cartei G, Fiorentino M
Clinica Medica I, Policlinico Universitario IV, Via Giustiniani 2, 35100 Padova, Italy
Tumori; 68(3):205-209 1982

Antithrombin III (AT III), the primary inhibitor of plasma protease coagulation proteins, was evaluated in groups of patients with different neoplastic disease. When compared with that of 25 healthy subjects, the mean value of AT III biologic activity was elevated in all groups, significantly in gastrointestinal (p less than 0.02) and lung (p less than 0.001) tumors, lymphoma (p less than 0.02) and in the group with various primary cancers (p less than 0.05). No difference was found between 46 patients tested under chemoradiotherapy and 216 patients who had not undergone therapy for at least 1 mo. Four patients with clinical thrombosis had normal AT III biologic activity. Of the 262 patients studied, 14 had low AT III biologic activity without clinical thrombosis and normal protein concentration. In 71 patients (27%) an excess of immunoassayable protein of 20% or more over biologic activity was found. Double immunoelectrophoresis performed in five of these showed for three patients an enlarged second arc of precipitation. Moreover, no correlation was observed between the activity and protein AT III concentration ($r = 0.05$). The likelihood of the presence of circulating AT III-protease complexes is discussed. (Author abstract) (17 Refs)

19. MEASUREMENT OF SERUM FERRITIN IN VARIOUS DIGESTIVE DISEASES BY REVERSED PASSIVE HEMAGGLUTINATION USING ANTI-HUMAN PLACENTAL FERRITIN ANTISERUM.

Tomoda H, Furusawa M, Seo Y, Matsukuchi T, Miyazaki M, Kanashima R
Dept. Surgery, Natl. Kyushu Cancer Center, 595, Notame, Minami-ku, Fukuoka 815, Japan
Jpn J Clin Oncol; 12(1):9-16 1982

Serum ferritin values were determined in 226 cases of various digestive diseases with the aid of anti-human placental ferritin antiserum used to provoke reversed passive hemagglutination, and the utility and limitations of the method were studied. Effects of combining serum ferritin assays with those for blood carcinoembryonic antigen (CEA) or serum alpha-fetoprotein (AFP) were also studied with respect to improving cancer diagnosis. The diseases included 30 benign diseases, 170 malignant diseases, and 26 recurrent diseases. Compared to the frequency of abnormal serum ferritin values among cases of benign diseases (10%), those for recurrent gastric cancer (44.4%), recurrent colorectal cancer (55.8%), pancreatic cancer (50%), and primary hepatoma (66.7%) were significantly higher. Compared to the cases of benign disease, cases of primary colorectal, esophageal, and pancreatic cancers and primary hepatoma had significantly higher frequency of abnormal values of either or both serum ferritin and blood CEA; rates of abnormal values in cases of recurrent colorectal and gastric cancer were significantly higher than in cases of primary colorectal and gastric cancer. Compared to the assay of serum ferritin alone, the combination assay for serum ferritin and serum AFP showed a higher incidence of abnormal values. The combination assays were thought to be useful for supplemental diagnosis of cancer. (23 Refs)

20. IMPACT OF CANCER, TYPE, SITE, STAGE AND TREATMENT ON THE NUTRITIONAL STATUS OF PATIENTS.

Bozzetti F, Migliavacca S, Scotti A, Bonalumi MG, Scarpa D, Baticci F, Ammatuna M, Pupa A, Terno G, Sequeira C, Masserini C, Emanuelli H
Istituto Nazionale per lo Studio e la Cura dei Tumori, Milano, Italy
Ann Surg; 196(2):170-179 1982

This study analyzed the nutritional status of cancer patients in relation to type and site of origin of the tumor, stage of disease, and previous chemical or radiation therapy. The analysis was performed on 321 patients (280 with cancer and 41 controls). The nutritional parameters included percent of wt loss, anthropometric indices (arm circumference, triceps skinfold, arm muscle circumference), creatinine-height index, serum protein, albumin, total iron binding capacity and cholinesterase, C3 and C4 components of complement, total peripheral lymphocytes, and skin tests. The statistical comparison between patients with different tumors and controls, between patients with different stages of the same tumor, and between patients treated with or without previous chemical or radiation therapy led to the following conclusions: (1) malnutrition is mainly related to the type and site of origin of the tumor and, in the early stages of disease, is more pronounced in patients with cancer of the esophagus and stomach; (2) except in patients with breast and cervix cancer, malnutrition gets more severe as the disease becomes advanced; (3) chemical or radiation therapy has a variable impact on the nutritional status, but in selected patients it causes a drop in body wt, arm circumference, arm muscle circumference, and peripheral lymphocytes; (4) body wt, cutaneous delayed hypersensitivity and serum albumin are the most commonly altered parameters. (Author abstract) (46 Refs)

21. DEFECTS OF SERUM CHEMOATTRACTION AND POLYMORPHONUCLEAR LEUCOCYTE MOVEMENT IN PATIENTS WITH PRIMARY HEPATOCELLULAR CARCINOMA.

Yousif-Kadaru AG, Wyke RJ, Rajkovic IA, Eddleston AL, Williams R
(c/o Williams) Liver Unit, King's Coll. Hosp. Medical Sch., Denmark Hill, London SE5 8RX, England
Clin Exp Immunol; 49(2):467-473 1982

Movement of polymorphonuclear leukocytes to the site of tumor cells may be an important stage in host defenses against tumors in a variety of organs. In this study, sera from 29 of 30 patients with primary hepatocellular carcinoma had reduced ability to stimulate the movement in vitro of normal polymorphonuclear leukocytes. The serum defect was more severe in 11 patients with underlying cirrhosis but was not related to abnormalities of tests of liver function, levels of serum alphafetoprotein, or deficiency of complement factors C3 and C5. Serial studies showed that the defect was persistent and progressive in patients in whom the tumor did not respond to treatment. In 35% of patients, mainly those with cirrhosis, the sera contained antagonists to normal serum chemotactic factors which were heat stable and dialyzable, but could be distinguished by their effect on complement factor C5a. A heat labile dialyzable antagonist(s) was found in sera from 28% of the patients (mainly those without cirrhosis) which antagonized the movement of normal polymorphonuclear leukocytes (cell directed antagonism). In addition to these serum defects, polymorphonuclear leukocytes from two of seven patients studied had reduced movement which was not related to the presence in the serum of cell directed antagonists. These serum and cellular defects have not been reported previously in patients with primary hepatocellular carcinoma, and could compromise the body's defenses against the tumor. (Author abstract) (16 Refs)

22. STUDY ON T-CELLS BEARING FC RECEPTORS FOR IGG IN PATIENTS WITH CANCER OF DIGESTIVE ORGANS.

Taki M
Dept. Surgery, Okayama Univ. Medical Sch., Okayama, Japan
Nippon Gan Chiryo Gakkai Shi; 17(3):720-727 1982

T- and Tgamma-cell populations were measured in 23 healthy controls, 9 controls with benign diseases, and 68 patients with gastrointestinal cancers (46 gastric, 16 rectal, 3 esophageal, and 3 pancreatic), and the relationships of the Tgamma-cell populations to other immunological parameters were studied. Also, the antibody-dependent cellular cytotoxicity (ADCC) and natural killer (NK) activities of various fractions of peripheral lymphocytes were determined. Tgamma-cells were detected with the aid of double-rosette forming method using non-coated sheep RBC and rabbit IgG antibody-coated chicken RBC. Tgamma-cell percentages were higher in the patients with cancer than in the controls. Compared to that of controls (5.4 +-2.1%), percentages of Tgamma-cells were 4.7 +-2.2% in patients with Stage I gastric cancer, 5.9 +-2.7% in Stage II, 8.5 +-3.9% in Stage III, and 8.7 +-4.4% in Stage IV. Percentages of Tgamma-cells increased with respect to increased Stage of the cancers, and the percentages returned to within the normal range when tumors were extirpated. ADCC and NK activities of the fractions of lymphocytes were highest in the Tgamma-rich fractions, and decreased in the order of T-rich, B-rich, and T non-gamma-rich fractions. No differences in the activities of each fraction were observed between the lymphocytes from the controls and cancer patients. (16 Refs) (In JPN)

SURGICAL AND RADIATION THERAPY

23. MODERN MANAGEMENT OF ANASTOMOTIC LEAK AFTER ESOPHAGOGASTRECTOMY.

Wilson SE, Stone R, Scully M, Ozeran L, Benfield JR
Surgical Service, Veterans Admin. Wadsworth Medical Center, Los Angeles, CA, 90073
Am J Surg; 144(1):95-101 1982

From 1970 to 1981, 167 patients, aged 35 to 84 years (mean 61), underwent resection for 94 adenocarcinomas and 73 squamous cell cancers. The operative mortality was 8.9%. Anastomotic leaks occurred in 19 patients (11.3%), including 18 of 72 (25%) after operations for palliation and 1 of 95 (1%) after procedures with curative potential (p less than 0.01). The leakage rate after esophagogastrostomy was 8.5%, compared with 43% after interposition operations. No leak is attributed to cancer in anastomotic margins. In contrast to previous reports of greater than 50% mortality from leaks, only 21% of our patients died in the past decade. Four of 19 contained leaks (sinus tract or upper gastrointestinal) were treated nonoperatively; esophagostomy was used only once. Factors responsible for improving results include early diagnosis with routine contrast studies on the 5th to 7th postoperative days, mandatory use of total parenteral nutrition, nonoperative management of contained leaks, accurate, aggressive use of adjuvant chest tubes, and selective esophagostomy for anastomotic disruption. (Author abstract) (16 Refs)

24. EMBOLISATION IN HEPATIC TUMOURS.

Nunnerley HB

Dept. Diagnostic Radiology, King's Coll. Hosp., Denmark Hill, London SE5 9RS, England

Excerpta Med Int Congr Ser; 575:66-71 1982

Embolization of hepatic benign and malignant tumors is discussed. Metastases are the commonest tumor found in the liver. If pain is particularly dominant because of the extent of the tumor or if the tumor is endocrine secreting (carcinoid) embolization is advisable. Patients with carcinoid metastases require a particular care and a pre-operative control of the hormone secretion. Any abnormality in clotting factors must be observed and the procedure has to be covered with antibiotics; penicillins and metronidazole should be administered for at least 10 days. Twenty-six patients (20 males, 6 females, 16-68 yr old) with malignant hepatomas were treated. Nine of the patients were Australian antigen positive, 13 had raised alpha-fetoprotein (AFP). After embolization a significant decrease in AFP levels was observed. Indications for a successful outcome from embolization are localized tumor, non cirrhotic liver, jaundice caused by compression of major ducts, pain, and association of the tumor with hormonal manifestations. Contraindications are cirrhosis, diffuse extensive tumor, obviously previous arterial ligation, and portal vein occlusion. Majority of patients with primary tumors are treated with chemotherapy, with or without embolization. Patients with benign tumors can be treated with embolization alone. (3 Refs)

25. CARCINOMA OF THE EXTRAHEPATIC BILE DUCTS.

van de Velde CJ, Leer JW

Afdeling Heelkunde-Oncologie, Academisch Ziekenhuis, Leiden, The Netherlands

Ned Tijdschr Geneeskd; 125(28):1118-1120 1981

The treatment of 23 patients (13 men and 10 women, 31-81 yr old, av age 61.9 yr) with carcinomas of the extrahepatic bile ducts is reported. Carcinoma of the hepatic duct or bifurcation was diagnosed in 8/23 patients, carcinoma of the common bile duct in 15. Adenocarcinoma was diagnosed histologically in 16 patients, papillary carcinoma in 4, undifferentiated carcinoma in 2, and squamous adenocarcinoma in 1. Regional tumor spread was found in 6/23 patients, distant metastases in 6/23. The symptoms included jaundice in 23 cases, loss of weight in 13, pain in 5, palpable gallbladder in 4, recurrent cholangitis in 3, and nausea and emesis in 2. The av duration of the symptoms was 5.7 mo in the patients with carcinoma of the hepatic duct and 1.8 mo in those with carcinoma of the common bile duct. Resection was possible in 5/23 patients, while 16 patients were treated by palliative drainage. Surgery, whether palliative or tentatively curative, was very often followed by recurrence of obstruction due to locoregional recurrence. The postoperative mortality for all 23 patients was 30%, being highest (62.5%) for the patients with tumors of the hepatic hilus. Two patients were still alive at the end of the follow-up period. The av survival of the other patients, excluding those who died during the postoperative period, was 8.8 mo. Radiotherapy appears to be advisable after curative as well as palliative surgery. (62 Refs) (In DUT)

26. EORTC MULTICENTER RANDOMIZED STUDY COMPARING PREOPERATIVE RADIOTHERAPY WITH SURGERY ONLY IN CASES OF RESECTABLE ESOPHAGEAL CANCER.

Gignoux M, Buyse M, Segol P, Roussel A, Paillot B, Kunlin A, Duez N

Service de Chirurgie Digestive, CHU Cote de Nacre, Caen, France

Acta Chir Belg; 82(4):373-379 1982

Preliminary results of a multicenter study of 192 patients with esophageal cancer are reported. Ninety-seven of the 192 patients (Group I) were subjected to preoperative radiotherapy (total dose 3,300 rads in 12 days), 95/192 (Group II) to surgery only. Preoperative radiotherapy did not seem to increase the resectability rate in Group I. Fifteen patients died of postoperative complications in each group. Pulmonary complications and anastomotic fistulae were the most frequent causes of deaths in both groups. Thirty other patients died in each group until the date of reporting. The median survival time was close to 1 yr in both groups, and that of the patients subjected to surgery with curative intent was close to 2 yr in both groups. Six of 27 irradiated patients and 14/40 nonirradiated patients have developed recurrences and/or metastases by the time of reporting after surgery with curative intent. The findings indicate no significant differences between the two groups in terms of postoperative mortality rate, mortality rate beyond the postoperative period, and in the median survival times, but the incidence of recurrences and/or metastases tended to be lower after preoperative irradiation in the patients subjected to surgey with curative intent. (2 Refs) (In FRE)

27. RADIOLABELED ANTIBODIES IN THE TREATMENT OF PRIMARY HEPATIC MALIGNANCIES (MEETING ABSTRACT).

Order SE, Ettinger D, Klein J, Leichner P, Leibel S, Wharam MD, Adams J, Kopher K, Chambers J

Department of Radiation Oncology, The Johns Hopkins Hospital, Baltimore, MD, 21205

Twenty-fourth Annual Meeting of the American Society of Therapeutic Radiologists, October 25-29, 1982, Orlando, Florida American Society of Therapeutic Radiologists; 1982

Eighty-one patients with primary hepatomas and seven patients with primary intrahepatic biliary cancer were entered into a protocol to initiate tumor remission with combination external irradiation plus chemotherapy and to evaluate in a phase 1-2 trial radiolabeled antibody I-131 IgG antiferritin, and antiCEA (carcinoembryonic antigen). Seven patients had a change in histologic diagnosis and one patient cancelled therapy. Of the remaining 69 patients, 23 had progressive disease and did not receive radiolabeled antibody, and twelve are too early to evaluate. Thirty-eight hepatoma patients received varied I-131 IgG antiferritin antibody preparations and six out of seven intrahepatic biliary cancer patients, I-131 antiCEA. The dosimetry, effective half life and treatment schedule were designed to minimize administered dose while achieving maximum tumor activity. NonAFP (alpha fetoprotein) producing hepatomas had a cumulative median survival of 2 months without antibody treatment and a cumulative median survival of greater than 1 year whith radiolabeled antibody. The longest patient in remission to date is over 34 months while 9 patients treated with antibody have survived a year or more. AFP positive tumors (20/69 evaluated hepatomas) were distinct from the other hepatomas in general, having a very brief median cumulative survival of less than one month without antibody treatment and greater than 6 months with antibody treatment. Of the 6 patients with biliary cancer treated with I-131 anti-

CEA, four achieved remissions of 5, 11, 15, and 27 months. (no Refs)

28. DOSIMETRY OF 131I-LABELED ANTI-FERRITIN IN HEPATOMA, SPECIFIC ACTIVITIES IN THE TUMOR AND PROPORTIONALITY OF MAXIMUM TUMOR ACTIVITY TO TUMOR VOLUME (MEETING ABSTRACT).

Leichner PK, Siegelman SS, Klein JL, Ettinger DS, Wallace J, Order SE

Department of Radiation Oncology, The Johns Hopkins Hospital, Baltimore, MD, 21205

Twenty-fourth Annual Meeting of the American Society of Therapeutic Radiologists, October 25-29, 1982, Orlando, Florida American Society of Therapeutic Radiologists; 1982

Dosimetric studies have been carried out for 16 hepatoma patients who were administered 131I-labeled anti-ferritin following combination chemotherapy and radiotherapy. Tumor volumes for these patients at the time of radioimmunoglobulin infusion ranged from 410 to 2740 cm3 and liver volumes from 900 to 4620 cm3. Administered activities of 131I-labeled anti-ferritin ranged from about 30 to 160 mCi. A linear regression analysis has shown that for tumor volumes less than about 2000 cm3 the maximum 131I activity deposited in the tumor was directly proportional to the tumor volume, but independent of the administered activity in the range of 30 to 160 mCi. The proportionality of maximum tumor activity to tumor volume means that in future treatments the administered activity can be optimized to achieve maximum tumor irradiation and minimum total-body irradiation (TBI). In the present treatment regimen, patients are administered 30 mCi on day zero and 20 mCi on day 5 following the first injection. This has resulted in a significant reduction of TBI for the patient and reduced radiation hazard for personnel. Preliminary results have indicated initial dose rates for each fraction of about 4 to 6 rad/h for tumor tissue, 0.75 to 1.1 rad/h for liver tissue, and 0.3 to 0.4 rad/h for TBI. The corresponding total tissue dose for two fractions has ranged from about 500 to 800 rads of continuous irradiation for the tumor, 140 to 160 rads for the liver, and 30 to 50 rads for TBI. New protocol developments include 4 cycles of radiolabeled antibody and integration of radiation potentiating drugs Adriamycin and 5FU (5-fluorouracils) to further amplify therapeutic effectiveness. (no Refs)

SELECTED CLINICAL CORRELATIONS

29. BILIARY CYSTADENOMA.

Frick MP, Feinberg SB

Dept. Radiology, Univ. Minnesota Hospitals, 420 Delaware St. S.E., Minneapolis, MN, 55455

AJR; 139(2):393-395 1982

Occurrence and growth of biliary cystadenomas (BCA) are discussed and case reports of two female patients (35 and 36 yr old) with BCA are presented. Most BCA occur in middle-aged women as painful epigastric masses occasionally accompanied by intermittent jaundice. Cyst spaces may occasionally communicate with the biliary duct system, and a pedunculated polyp may then prolapse causing intermittent jaundice. If a cystadenoma is suspected, surgical management is indicated because BCA and cystadenocarcinoma cannot be reliably differentiated on the basis of macroscopic appearance. (11 Refs)

30. MALIGNANT LYMPHOMAS OF GASTROINTESTINAL TRACT (HISTOGENESIS, MORPHOGENESIS, AND HISTOLOGICAL DIAGNOSIS).

Gordeladze AS, Bystrova VV

Dept. Pathology, Sanitary-Hygienic Medical Inst., Leningrad, USSR

Arkh Patol; 44(6):14-20 1982

To improve the differential diagnosis between Hodgkin's disease (HD) and non-Hodgkin's lymphomas of the gastrointestinal tract (GIT), surgery or autopsy specimens from 70 patients were subjected to histological examination. Among these patients, 54 had lymphosarcomas (LS) and 16 had HD. The tumors were located in the stomach (27 LS and 6 HD), small intestine (14 LS, 5 HD), and large intestine (5 LS). Six patients (3 with LS and 3 with HD) had involvement of several GIT organs and seven patients (5 with LS and 2 with HD) had disseminated tumors with involvement of distant and regional lymph nodes. Of 54 LS patients, 16 had prolymphocytic variant, 17 had lymphoblastic variant, 5 had immunoblastic variant, and 17 had mixed prolymphocytic-lymphoblastic variant. Of 16 HD patients, 1 had lymphocytic prevalence, 5 had mixed cellular variant, 4 had lymphocytic depletion, and 6 had mixed cell variant in combination with lymphocytic depletion. Differential diagnosis between LS and HD was based upon the type of tumor infiltration. (20 Refs) (In RUS)

31. GASTRIC LYMPHOMA (MEETING ABSTRACT).

Mittal B, Wasserman TH, Griffith R

Washington University School of Medicine, St Louis, MO

Twenty-fourth Annual Meeting of the American Society of Therapeutic Radiologists, October 25-29, 1982, Orlando, Florida American Society of Therapeutic Radiologists; 1982

Thirty-four patients with non-Hodgkin's lymphomas of the stomach were treated with curative intent from 1958 to 1979. Nineteen patients presented with Stage IE and 15 patients with Stage IIE disease (Ann Arbor staging). The surgey-alone (S) group (N equals 11) consisted of patients with Stage IE disease who were treated with subtotal or total gastrectomy. The radiation-alone (R) group (N equals 5) consisted of patients who were unresectable at the time of laparotomy and were treated to doses of 4000-4500 rad encompassing stomach and para-aortic area. The surgery- and radiation (S+R) group (N equals 12) consisted of patients who were treated with gastrectomy and radiation to the entire abdomen or stomach and para-aortic area with doses ranging from 2200 to 4600 rad. Patients in the surgery+radiation+chemotherapy (S+R+C) group (N equals 6) were treated with gastrectomy followed by radiation to the gastric bed and para-aortic area and chemotherapy. Failure sites were: Primary (two patients), inguinofemoral nodes (2) and distant metastases (6). Of 29 patients who underwent gastrectomy, three died of surgical complications and six had severe dumping syndrome. Radiation caused no major complications. Most patients had transient nausea/vomiting. Ten patients were treated with R+chemotherapy, six for cure and four for palliation (these four patients had massive stomach involvement with Stage IV disease and are not included in failure or survival analysis). None of these ten patients developed any evidence of gastric perforation or hemorrage. Two of 34 patients had gastric perforation at the time of initial presentation and underwent gastrectomy. Five-year absolute disease-free survival for all 34 patients is 64%; for Stage IE, 62%; for Stage IIE, 67%; for S group, 45%; for the R group, 40%; for the S+R group, 74%, and for the S+R+C, 100%. Survival was significantly higher for females and for patients receiving adjuvant radiation and chemotherapy than for patients treated with R or S alone. (no Refs)

32. THE TREATMENT OF HEPATIC METASTASES: INDICATIONS AND RESULTS.

Egeli RA, Balser S, Rohner A

Clinique de chirurgie digestive, Hopital cantonal universitaire, 1211 Geneva 4, Switzerland

Rev Med Suisse Romande; 102(4):389-397 1982

Of 83 hepatectomies, 26 (31%) involved hepatic metastases from a solid tumor. In 4/5 cases the site of the primary tumor was the colon or the rectum. In 8/21 cases, metastases were discovered during surgical intervention for the primary tumor. Adjuvant therapy included presurgical chemotherapy (3 cases), pre- and postsurgical chemotherapy (2), and postsurgical chemotherapy (4). Three patients died from surgical complications. The av postoperative survival rate was 16.8 mo excluding the three postsurgical deaths. One patient was alive at more than 6 yr after the surgery having undergone right hepatectomy for a very large tumor of the liver and enucleation of an isolated lesion of the left lobe. Another patient who underwent two separate procedures on each lobe for a carcinoid syndrome was asymptomatic and alive at 9 yr postoperatively. Based on the above results and an analysis of the literature, it is suggested that surgical resection of hepatic metastases is justified and may in some cases improve survival rates or provide substantial palliative benefits. (14 Refs) (In FRE)

REHABILITATION ASPECTS

33. PALLIATIVE ENDOSCOPIC TREATMENT OF ESOPHAGEAL CANCER.

Foco A, Garbarini A, Serentha U, Sanfelici G, Gallin-ani R, Enrichens E, Caponi R

Istituto di Chirurgia d'Urgenza, Universita di Torino, Turin, Italy

Minerva Chir; 37(9):839-844 1982

Ten patients (all men, median age 64 yr) with esophageal carcinoma were subjected to palliative endoscopic intubation. Squamous epithelial carcinoma was diagnosed in 9/10 patients, adenocarcinoma in 1/10. The tumor was located in the lower third of the esophagus in two patients, in the middle third in four, and in the upper third in four. Nine of the 10 patients were in poor condition, one was in good condition. The degree of dysphagia was 3 in three patients, 4 in seven. One patient had metastases, and esophagotracheal fistula and esophagobronchial fistula were present in one patient each. One patient died during the hospitalization. The grade of dysphagia after the intubation was 2 in all nine surviving patients. Dislocation of the tube occurred in 4/9 patients, obstruction in 3/9. Six of the nine patients died after 1-4 mo, three others have been alive for 2-5 mo. Eight other patients (median age 58 yr) with squamous-cell carcinoma of the esophagus were subjected to surgical intubation. The tumor was located in the lower and middle thirds of the esophagus in four patients each. Five of the eight patients had metastases. The hospital stay averaged 10 days. There was no postoperative mortality. All eight patients died within 3 mo. (7 Refs) (In ITA)

34. PARENTERAL NUTRITION IN ESOPHAGEAL CANCER PATIENTS.

Daly JM, Massar E, Giacco G, Frazier OH, Mountain CF, Dudrick SJ, Copeland EM
Dept. Surgery, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY, 10021
Ann Surg; 196(2):203-208 1982

A review of operative therapy in 244 patients with esophageal cancer from 1960 to 1980 was done to evaluate the impact of TPN in 72 patients treated from 1973 to 1980 with 43 non-TPN patients treated during the same period and to 129 patients operated upon before 1973. Mean age, sex distribution, site, stage, and treatment of the disease were similar for the two study groups. The TPN group lost less wt during treatment (3 lbs vs 11 lbs) and had fewer overall complications postoperatively (24% vs 41%). Significant reductions in major wound, infectious, and postoperative complications were noted in these patients who received at least 5 days of preoperative TPN compared with postoperative TPN or the non-TPN groups (4% vs 24% and 23%). Malnourished esophageal cancer patients can more safely undergo aggressive operative therapy and radiation treatment when adequate perioperative nutritional support is added to the treatment armamentarium. (Author abstract) (16 Refs)

SELECTED STUDIES IN EPIDEMIOLOGY AND ETIOLOGY OF HUMAN CANCER

35. PRIMARY HEPATOCELLULAR CARCINOMA AND HEPATITIS B VIRUS.

Blumberg BS, London WT
Dept. Medicine, Univ. Pennsylvania, Philadelphia, PA
Curr Probl Cancer; 6(12):1-23 1982

The history, pathobiology, prevention and etiology of hepatocellular carcinoma (HPC) associated with hepatitis B virus (HBV)-infection are reviewed. There is now substantial evidence to support the hypothesis that persistent HBV infection is required for the development of PHC. Prevention of infection with HBV will result in prevention of most cases of HBV. Strategies of primary prevention, intrafamily transmission, insect transmission, and a cellular model for primary hepatocellular carcinoma are among other topics discussed. The proposed model suggests an approach to cancer therapy different from that usually used. While most conventional therapies are directed toward the total destruction of cancer cells, with the side-effect of normal tissue damage, the model suggests that the viability of infected noncancerous cells should be enhanced so that their numbers relative to those cells with integrated HBV DNA will increase and thereby prevent the continued growth of tumors. (35 Refs)

36. ORAL CONTRACEPTIVES AND CANCER OF THE LIVER: A REVIEW WITH TWO ADDITIONAL CASES.

Helling TS, Wood WG
Dept. Surgery and Pathology, St. Luke's Hosp., 4320 Wornall Road, Kansas City, MO, 64111
Am J Gastroenterol; 77(7):504-508 1982

We report two cases of hepatocellular carcinoma occurring in young women who had no prior history of liver disease and who had taken oral contraceptive drugs. We wish to emphasize that malignant, as well as benign, liver tumors can occur in users of oral contraceptives. Moreover, because benign tumors not infrequently rupture causing fatal hemorrhage, we urge an aggressive approach to prompt diagnosis and surgical excision of any liver tumor in young women who have taken oral contraceptives. (Author abstract) (34 Refs)

37. RELATIONSHIP OF DIET TO THE INCIDENCE OF ESOPHAGEAL AND STOMACH CANCER IN JAPAN.

Nagai M, Hashimoto T, Yanagawa H, Yokoyama H, Minowa M
Dept. Public Health, Jichi Medical Sch., Tochigi-ken, Japan
Nutr Cancer; 3(4):257-268 1982

The food intake of households in 1,040 census tracts sampled in 1974, 1975, and 1976 for the nationwide nutrition survey of the Japanese Ministry of Health and Welfare, and the standardized mortality ratios (SMRs) of stomach and esophageal cancers from 1969 to 1974 for the cities, towns, and villages of the nutrition survey areas, were linked and their relationship was observed statistically by correlation analysis and multiple regression analysis. The results obtained are summarized as follows: (1) The food items positively related to the SMR for stomach cancer were wheat, pickled vegetables, and beef, while tofu (soybean curd) was negatively related. (2) Foods positively related to esophageal cancer were wheat, pork, and dried or salted fish. (3) Pickled vegetables and dried or salted fish contain a high percentage of salt (NaCl), and thus the positive relationship of these foods to both stomach and esophageal cancers suggests a relationship between salt and these diseases. (Author abstract) (8 Refs)

38. THE EPIDEMIOLOGY OF CANCER IN CHINA.

Armstrong B
Dept. Medicine, Univ. Western Australia, Queen Elizabeth II Medical Centre, Nedlands, Western Australia, Australia
World Health Forum; 3(1):95-101 1982

Epidemiology of cancer in China based on a retrospective survey of cancer mortality with additional data on the main cancer sites is reviewed. A total of 18,439,072 deaths were surveyed and 1,868,310 (10.1-11.3% in males and 8.8% in females) were attributed to cancer. The highest level of diagnosis and treatment and the best available criterion for the diagnosis of cancer are summarized. For all sites of cancer together the estimated mortality rates in China were 119.6/100,000 for males and 80.7/100,000 for females, adjusted to age distribution of the 'world' population. Among countries reporting mortality by site of cancer, China has the highest mortality from esophageal cancer with annual rates of 31.7/10,000 in males and 15.9/100,000 in females. Cancer of the stomach is the most common form of cancer leading to death in China. The mortality rates are 32.4 and 15.9/100,000 in males and females, respectively. The rates are substantially lower than those in Japan. Liver cancer (presumed primary) is the third more important cancer as a cause of death in China and accounts for 15% of all cancer deaths. Mortality rates of the cancer of the cervix are generally higher in the rural than in urban areas. An unusual feature of the high rate of lung cancer in Chinese women, particularly Cantonese women, is the relatively high proportion of the tumors which are adenocarcinomas. The county with highest rates of large bowel cancer is an area of endemic schistosomiasis in Zhajiang province. The geographic distribution of nasopharyngeal cancer within China is quite remarkable, with a very high incidence area centered on Guandong province in the south. (11 Refs)

39. MORTALITY PATTERNS IN EIGHT U. K. OIL REFINERIES.

Alderson M, Rushton L
Inst. Cancer Res., Sutton, Surrey, England
Ann NY Acad Sci; 381:139-145 1982

The patterns of mortality are described for 35,000 male employees, with a minimum of 1 year's continuous service, who worked at 8 refineries in the UK in the period 1 January 1951-31 December 1975. The trace rate of those involved was 99.8%. Overall the ratio of observed to expected deaths was 0.84 (O = 4,406, E = 5,259.9 p less than 0.00001). The numbers of deaths for many of the chronic degenerative diseases were lower than 'expected'. The number of observed deaths from all cancers were appreciably less than expected (O = 1,147, E = 1,286.4, O/E = 0.89, p = 0.00006). Lung cancer was particularly reduced (O = 416, E = 532.7, O/E = 0.78, p 0.00001); there was no excess of leukemia (in workers including some exposed to benzene). Other comparable studies have suggested an excess of gastrointestinal cancer. In the present study deaths from esophageal, stomach, intestinal, and rectal cancer were slightly raised for all workers (O = 346, E = 328.6, O/E = 1.05, p less than 0.4); this was particularly true for those joining before 1950 with long service and increased latent interval. There were also excesses based on small numbers of deaths from nasal cancer (O = 7, E = 3.1, O/E = 2.24, p less than 0.05), and melanoma (O = 14, E = 6.5, O/E = 2.16, p less than 0.01). There was no evidence of an excess of brain tumors (O = 36, E = 44.8, O/E = 0.80, p less than 0.2). (Author abstract) (18 Refs)

SELECTED PRE-CLINICAL STUDIES

40. SEQUENTIAL MORPHOLOGICAL STUDIES OF THE ESOPHAGEAL CARCINOMA OF RATS INDUCED BY N-METHLY-N-AMYLNITROSAMINE.

Sasajima K, Taniguchi Y, Okazaki S, Morino K, Takubo K, Yamashita K, Shirota A
First Dept. Surgery, Nippon Medical Sch., Sendagi 1-1-5, Bunkyo-ku, Tokyo, Japan
Eur J Cancer Clin Oncol; 18(6):559-564 1982

N-Methyl-N-amylnitrosamine was given to male Wistar rats in the drinking water at a concentration of 0.003% for 8 weeks. Three rats were autopsied weekly from the 1st to the 25th week. The stages of hyperplasia, dysplasia and squamous cell carcinoma in the esophagus were chronologically observed. Hyperplasia and dysplasia were found by the 6th week and continuously observed until the end of the experiment. Early squamous cell carcinomas were found in the 13th week. They showed endophytic or exophytic growths. Histologically, the endophytic growths were well-differentiated squamous cell carcinomas and the exophytic growths were poorly-differentiated. Advanced carcinomas were first found in the 15th week and were almost well-differentiated. Carcinomas were not found in papillomas. The incidence of carcinomas increased with time, being 9 out of 15 rats (60%) in the final 21st though 25th weeks. Lymph node metastasis was found in one rat, killed at the 24th week. (Author abstract) (9 Refs)

41. IN VITRO TRANSFORMATION OF RAT ESOPHAGEAL EPITHELIAL CELLS WITH N-NITROSOBENZYLMETHYLAMINE.

Stoner GD, Babcock MS, Cothern GA, Klaunig JE, Gunning WT, Knipe SM

Dept. Pathology, Medical Coll. Ohio, 3000 Arlington Ave., Toledo, OH, 43614

Carcinogenesis; 3(6):629-634 1982

Using an explant/cell culture system, rat esophageal epithelial cells were transformed in vitro by exposure to N-nitroso-N-benzyl-N-methylamine (BMNA). Twelve esophageal explant cultures per group were exposed twice (at Days 1 and 7) to 0.0, 2.5, 5.0 or 10.0 ug BMNA/ml of medium. After incubation for 60-90 days, epithelial cells in primary cultures treated with all three concentrations of BMNA could be subcultured and cell lines were developed. The number of primary cultures and the number of subsequently developed epithelial cell lines was carcinogen-dose-dependent. Cell lines could only be established from carcinogen treated explants. Electron microscopy revealed that the BMNA-treated cell lines contained morphological markers of esophageal epithelial cells; ie, numerous tonofilaments and junctional complexes, even after prolonged subculture. By immunofluorescence, the cells reacted positively with antibodies prepared to mouse skin prekeratins (K1 and K2). Two cell lines (from the 5 ug BMNA/ml group) were able to grow in soft agar and produce palpable tumors upon injection into syngeneic recipients. These tumors possessed the histological features of squamous cell carcinomas. (Author abstract) (27 Refs)

42. DIFFERENCES IN METABOLISM OF CHEMICAL CARCINOGENS IN CULTURED HUMAN EPITHELIAL TISSUES AND CELLS.

Harris CC, TrumpBF, Grafstrom R, Autrup H

Lab. Human Carcinogenesis, NCI, NIH, Bethesda, MD, 20205

J Cell Biochem; 18(3):285-294 1982

Activation and deactivation of chemical procarcinogens were studied in cultured, nontumorous human epithelial tissues and cells. Procarcinogens were selected primarily on the basis that they represented several chemical classes and were found in the diet, drinking water, polluted air, and/or tobacco smoke. Conversion of the procarcinogens by cultured human tissues into metabolite(s) that bind covalently to DNA was investigated. Cultured human bronchus converted every procarcinogen studied into forms that bind to DNA. Carcinogens, such as aflatoxin B1, were activated to carcinogen-DNA adducts by cultured human tissues, bronchus, esophagus, colon, and bladder, even though epidemiological studies have not implicated aflatoxin B1 as a cause of cancer at these tissues. Metabolism of benzo[a]pyrene (BAP) and formation of DNA adducts were studied in cultured human tissues collected at the time of immediate autopsy. BAP metabolism and DNA binding were highest in the bronchus. Results indicated that quantitative extrapolations of carcinogen binding data may be possible among some, but not all tissues, and when different chemical classes of carcinogens are compared, quantitative and predictive correlations may frequently not be observed. Differences in carcinogen metabolism among people may be qualitative and/or quantitative. The magnitude of the differences ranges from 50-to 150-fold and is similar to that found in pharmacogenetic studies of drug metabolism. The rate-limiting enzymatic reaction could differ among humans and tissue types. (60 Refs)

43. EFFECT OF SEX HORMONES ON THE EXPERIMENTAL INDUCTION OF CANCER IN RAT STOMACH - A PRELIMINARY STUDY.

Furukawa H, Iwanaga T, Koyama H, Taniguchi H

(c/o Iwanaga), Center for Adult Diseases, Osaka, 3-3, Nakamichi, 1-Chome, Higashinari-ku, Osaka 537, Japan

Digestion; 23(3):151-155 1982

The effects of sex hormones on the induction of gastric carcinoma by N-methyl-N'-nitro-N-nitrosoguanidine (MNNG) were investigated in Wistar rats. Well-differentiated adenocarcinomas developed with high frequency (88%) on the glandular stomach of male rats given MNNG in drinking water (50 ug/ml) for 4 mo and sacrificed on the 12th mo of the experiment. In female rats given MNNG, no gastric cancer was observed. In the castrated or estradiol-treated male rats, the incidence of carcinoma was lower (29 and 68%, respectively) than in the nontreated male rats. Histologically, poorly differentiated adenocarcinomas were observed more frequently in these groups than in the nontreated male group. In MNNG carcinogenesis, female, castrated male and estrogen-treated male rats had a lower incidence of gastric cancer with lower histological differentiation than did nontreated male rats. (Author abstract) (11 Refs)

44. GROWTH OF HUMAN HEPATOMA CELL LINES WITH DIFFERENTIATED FUNCTIONS IN CHEMICALLY DEFINED MEDIUM.

Nakabayashi H, Taketa K, Miyano K, Yamane T, Sato J

(c/o Sato) Div. Pathology, Cancer Inst., Okayama Univ. Sch. Medicine, 2-5-1 Shikata-cho, Okayama 700, Japan

Cancer Res; 42(9):3858-3863 1982

A human hepatoma cell line, HuH-7, which was established from a hepatocellular carcinoma, was found to replicate continuously in a chemically defined medium when the medium was supplemented with Na2SeO3. The cells grew better in this medium than in serum-containing medium without any adaptation period. Other established human hepatoma and hepatoblastoma cell lines, HuH-6 cl-5, PLC/PRF/5, huH-1, and huH-4, also grew in the defined medium. Although HLEC-1 cells failed to proliferate continuously with Na2SeO3 alone, they grew if a cell-free conditioned medium from HuH-7 cells was added to the medium. These cell lines, except the HLEC-1 cell line, produced the following human plasma proteins among those examined: albumin, prealbumin, alpha1-antitrypsin, ceruloplasmin, fibrinogen, fibronectin, heptoglobin, hemopexin, beta-lipoprotein, alpha2-macroglobulin, beta2-microglobulin, transferrin, Complement Components 3 and 4, and alpha1-fetoprotein. Beside plasma proteins, the media from HuH-7, HuH-6 cl-5, PLC/PRF/5, and huH-1 contained anti-carcinoembryonic antigen-reactive proteins, and those from PLC/PRF/5, huH-1, and huH-4 medium contained hepatitis B surface antigen. These proteins were detected during periods of serial cultivation over 9 mo under the above culture conditions. The hepatoma cell lines grown in the fully defined synthetic medium may provide a new approach for investigating the growth and metabolism of human hepatoma cells in vitro. (Author abstract) (35 Refs)

45. IMMUNOTHERAPY IN NUDE MICE OF HUMAN HEPATOMA USING MONOCLONAL ANTIBODIES AGAINST HEPATITIS B VIRUS.

Shouval D, Shafritz DA, Zurawski VR, Isselbacher KJ, Wands JR
Liver Res. Center, Dept. Medicine and Cell Biology, Albert Einstein Coll. Medicine, Bronx, NY, 10461
Nature; 298(5874):567-569 1982

The ability of (IgM, IgG2a, and IgG1) monoclonal antibodies (anti-HBs) to hepatitis B surface antigen to specifically prevent or suppress tumor formation in a substantial number of animals was examined in athymic nude mice injected with the human hepatoma cell line PLC/PRF/5. Treated BALB/c male nude mice received IgM anti-HBs (iv), IgG2a anti-HBs (ip), or IgG1 anti-HBs (ip) and control mice received 100 ul of phosphate-buffered saline iv or ip. Sc injection of PLC/PRF/5 cells produced tumors in 37/39 control nude mice. Treatment of tumor-injected mice with anti-HBs IgM prevented tumor formation in 15/23 animals, and suppressed tumor growth in 4 others. Anti-HBs IgG2a showed a protective response in 18/26 animals, with prevention of tumor formation in 8 mice and suppression of tumor growth in 10 mice. Monoclonal IgG1 anti-HBs, which bound effectively to PLC/PRF/5 cells in culture, had no effect on tumor growth. No response was observed in 11/16 tumor-injected mice who were treated with monoclonal antibodies to non-hepatitis B virus. Further evidence for suppression of tumor growth by monoclonal anti-HBs IGM or IgG2a was shown by an increased tumor latency, a slower tumor growth rate, and a decreased tumor wt at necroscopy compared to control animals. Differences in the effectiveness of the three monoclonal antibodies on PLC/PRF/5 tumor growth are discussed. (20 Refs)

46. THE RADIOPROTECTION OF PARENCHYMAL HEPATOCYTES WITH WR-2721 (MEETING ABSTRACT).

Jirtle RL, Noell KT
Duke University Medical Center, Durham, NC
Twenty-fourth Annual Meeting of the American Society of Therapeutic Radiologists, October 25-29, 1982, Orlando, Florida American Society of Therapeutic Radiologists; 1982

The successful treatment of metastatic and primary tumors of the liver with ionizing radiation is limited by the radiosensitivity of the surrounding normal parenchymal tissue. To investigate the radiation survival characteristics of liver we developed an in vivo clonal assay system for parenchymal hepatocytes. The survival curve for noncycling hepatocytes irradiated with low LET (linear energy transfer) radiation has been shown to possess a relatively small shoulder even after potentially lethal damage is repaired. This indicates that parenchymal hepatocytes may be relatively more sensitive than malignant cells to conventional fractionated radiotherapy treatment. The radioprotective agent WR-2721 has been reputed to selectively protect normal tissues and to concentrate in the liver. Based upon this information we initiated studies to determine to what extent WR-2721 protects parenchymal hepatocytes from radiation damage. Female Fischer 344 syngeneic rats were given an IP injection of WR-2721 (400 mg/kg) 30 min prior to 60Co irradiation. In order to allow for potentially lethal damage repair the hepatocytes were assayed for cell survival 24 hrs after irradiation. The results of this study demonstrate that in the liver WR-2721 acts as a dose modifying agent with a DMF of approximately 2.1. Thus, the Dq and D0 values for hepatocytes irradiated in the presence of WR-2721 were increased from 220 to 470 cGy and 270 to 570 cGy, respectively. If malignant cells are not protected to the same extent, WR-2721 could provide a significant selective radioprotection of the liver during fractionated treatment of primary and metastatic lesions. (no Refs)

47. INCREASED URIDINE DIPHOSPHATE-GLUCURONYLTRANSFERASE ACTIVITY IN PRENEOPLASTIC LIVER NODULES AND MORRIS HEPATOMAS.

Bock KW, Lilienblum W, Pfeil H, Eriksson LC
Dept. Pharmacology, Univ. Gottingen, Kreuzbergring 57, D-3400 Gottingen, W. Germany
Cancer Res; 42(9):3747-3752 1982

In preneoplastic rat liver nodules produced by 2-acetylaminofluorene, certain uridine diphosphate-glucuronyltransferase (UDP-GT) activities, which are ascribed to a distinct enzyme form, were selectively increased (5-fold). This enzyme form, operationally termed UDP-GT1, accepts 1-naphthol,4-methylumbelliferone, and 3-hydroxybenzo(a)pyrene as substrates and is chiefly inducible in liver by 3-methylcholanthrene-type inducers. Glucuronidation of other substrates (morphine, 4-hydroxybiphenyl, chloramphenicol, bilirubin, and estrone) was only slightly enhanced or decreased in nodular tissue. Differentially increased UDP-GT1 activities were also found in Morris hepatomas 9121 and 7777. Rabbit antibodies to rat liver UDP-GT1, purified from 3-methylcholanthrene-treated rats, demonstrated immunological similarity between the enzymes from liver, nodular tissue, and Morris hepatoma 9121. Rocket immunoelectrophoresis ascertained that enhanced enzyme activity in nodular tissue reflected an increased level of enzyme protein. Increased activity of UDP-GT1 together with decreased cytochrome P-450-dependent monooxygenase may contribute to the resistance of preneoplastic hepatocytes to the cytotoxic actions of chemical carcinogens. (Author abstract) (43 Refs)

48. LINEAR DOSE-RESPONSE CURVE FOR THE HEPATIC MACROMOLECULAR BINDING OF AFLATOXIN B1 IN RATS AT VERY LOW EXPOSURES.

Appleton BS, Goetchius MP, Campbell TC
(c/o Campbell) Div. Nutritional Sciences, Cornell Univ., Ithaca, NY, 14853
Cancer Res; 42(9):3659-3662 1982

The possibility of a low dose threshold for rat liver macromolecular binding of aflatoxin B1 was investigated. Doses in ng/kg of radiolabeled aflatoxin B1 produced measurable covalent binding of aflatoxin to DNA, RNA, and protein, and the extent of this binding increased linearly over a dose range of 10 to 1,000 ng/kg. Macromolecular adduct formation was observed at the lowest dose used (10 ng/kg) which is within the human exposure range. Although diethyl maleate caused a reduction in hepatic glutathione from 5 to 2.3 umol/g of liver and a slight increase in macromolecular adduct levels, the dose-response curve for macromolecular adduct formation remained linear in both diethyl maleate-pretreated and control groups. These results indicate that macromolecular binding of aflatoxin B1 is essentially a linear function of dose at low exposures and that hepatic glutathione offers little if any protection against this binding. (Author abstract) (26 Refs)

49. PROTEIN SECRETIONS IN HAMSTERS WITH PANCREATIC CARCINOMA.

Allan BJ, White TT, Reber HA, Roberts C, Schilling JJ
Dept. Surgery RF 25, Univ. Washington, Seattle, WA, 98195
Dig Dis Sci; 27(5):437-443 1982

Pancreatic secretions from the hamster model for pancreatic ductal adenocarcinoma were analyzed to determine whether alterations had occurred in the protein composition. CCK- and secretin-stimulated secretions were collected from 13 animals with cancer and 16 normal controls. Subsequent separation of the proteins by isoelectric focusing showed the following: (1) Significant changes occurred in the protein composition from animals with carcinoma. An unusually dark band was present at pH 7.5 just below amylase (pH 7.65); two unidentified bands, present in the normals at pH 6.9 and 7.0, were missing; and marked decreases occurred in the cathodic proteins with isoelectric points above pH 9. (2) CCK provided the optimal stimulus for differentiating specimens from animals with carcinoma from the normal controls. (3) The protein concentrations of CCK-stimulated secretions of animals with carcinoma were significantly lower than the controls. We have concluded that the protein alterations which have occurred in the hamster model for pancreatic ductal adenocarcinoma warrant further investigation. (Author abstract) (13 Refs)

50. SEPARATION AND CHARACTERIZATION OF NEOPLASTIC CELL SUBPOPULATIONS OF A TRANSPLANTABLE RAT PANCREATIC ACINAR CARCINOMA.

Becich MJ, Reddy JK
(c/o Reddy) Dept. Pathology, Northwestern Univ. Medical Sch., 303 East Chicago Ave., Chicago, IL, 60611
Cancer Res; 42(9):3729-3740 1982

The transplantable pancreatic acinar carcinoma established in F344 rats demonstrates heterogeneity of cytodifferentiation with cell types ranging from those containing no zymogen granules to cells with mature zymogen differentiation. Two relatively homogeneous subpopulations of cells were isolated by isopyknic Percoll gradient centrifugation from the heterogeneous cell population of this tumor. The subpopulation obtained at a density of 1.0987 g/ml was designated the granule-enriched fraction (GEF) and contained morphologically differentiated cells with abundant mature zymogen granules. The other subpopulation, obtained at a density of 1.0789 g/ml, consisted of poorly differentiated cells lacking zymogen maturation and was thus termed the granule-deficient fraction (GDF). In both fractions, greater than 97% of the cells were viable and maintained linear rates of [3H]leucine and [3H]thymidine incorporation into protein and DNA for up to 3 hr following isolation. Twenty percent of the cells in GDF subpopulation and 12% of the cells in GEF subpopulation synthesize DNA. Distinct differences in nuclear:cytoplasmic ratio, secretory granule content, and degree of polarity were found between GDF and GEF. The GEF subpopulation contained high levels of amylase and lipase, while the GDF subpopulation displayed very low levels of these enzymes. Both subpopulations produced tumors when injected sc into F344 rats. Concanavalin A (Con A) receptors were found on pancreatic carcinoma cells regardless of the extent of cytodifferentiation in contrast to normal pancreatic embryogenesis, in which Con A receptors are discerned only in acinar cells containing mature secretory granules. This finding suggests either that the neoplastic transformation results in altered genetic expression or that pancreatic carcinoma arises from dedifferentiation of mature acinar cells which normally possess Con A receptors. (52 Refs)

51. INDUCTION OF CARCINOMA OF GALLBLADDER IN HAMSTERS BY INSERTION OF METHYLCHOLANTHRENE BEESWAX PELLETS.

Suzuki A, Watanabe M, Takahashi T
Dept. Surgery, Koto General Hosp., Akita, 018-16, Japan
Jpn J Surg; 12(3):227-228 1982

Successful induction of gallbladder cancer in female hamsters is reported. The animals were subjected to insertion of a pellet into the gallbladder. The pellet contained either beeswax alone (B group) or beeswax mixed with methylcholanthrene (MC-B group). The animals were sacrificed 170-201 days (B group) or 145-226 days (MC-B group) after insertion. Gallbladder carcinomas were observed in 9/23 hamsters in MC-B group and in 0/32 hamsters in B group. Dysplasia of the gallbladder epithelium was detected in three hamsters in MC-B group and in four hamsters in B group. (3 Refs)

AUTHOR INDEX WITH CITATION NUMBERS

Accary J 15
Adams J 27
Alderson M 39
Allan BJ 49
Ammatuna M 20
Antonioli DA 4
Appleton BS 48
Armstrong B 38
Arrago J 15
Ashizawa S 5
Autrup H 42
Babcock MS 41
Balser S 32
Baticci F 20
Becich MJ 50
Benfield JR 23
Bjerkeset T 8
Blumberg BS 35
Bock KW 47
Bonalumi MG 20
Bonfils S 15
Bozzetti F 20
Buyse M 26
Bystrova VV 30
Campbell TC 48
Caponi R 33
Cartei C 18
Cederqvist C 6
Cerf M 15
Chambers J 27
Chayvialle J 15
Chiotasso PJ 9
Cho KJ 16
Coelho JC 2
Copeland EM 34
Corvalan J 11
Cothern GA 41
Daly JM 34
Donahue PE 2
Dronova OM 17
Dudrick SJ 34
Duez N 26
Eddleston AL 21
Egeli RA 32
Ellis DJ 3
Emanuelli H 20
Enrichens E 33
Eriksson LC 47
Ettinger D 27
Ettinger DS 28
Fazio VW 9
Feinberg SB 29
Fielding JW 11
Fielding JW 3
Fiorentino M 18
Foco A 33
Ford CH 11
Frazier OH 34
Frick MP 29
Fukunishi R 14
Furukawa H 43
Furusawa M 19
Gallin-ani R 33
Garbarini A 33
Giacco G 34
Gignoux M 26
Glaser B 16
Glowniak JV 16
Goetchius MP 48
Goldman H 4
Gordeladze AS 30
Grafstrom R 42
Griffith R 31
Guerra C 18
Gunning WT 41
Hamilton DG 1
Hansen HS 6
Harris CC 42
Hashimoto T 37
Helling TS 36
Ichikawa M 5
Inokuchi K 13
Isselbacher KJ 45
Ito H 12
Iwamoto T 12
Iwanaga T 43
Iwata S 5
Jirtle RL 46
Jones BG 11
Jones BG 3
Kamano T 14
Kanashima R 13
Kanashima R 19
Kino I 5
Klaunig JE 41
Klein J 27
Klein JL 28
Knipe SM 41
Konomi K 10
Kopher K 27
Koyama H 43
Kunlin A 26
Laktionova AI 17
Leer JW 25
Leibel S 27
Leichner P 27
Leichner PK 28
Leiman G 1
Lilienblum W 47
Lillestol J 8
Lober J 6
London WT 35
Mannell A 1
Massar E 34
Masserini C 20
Matsukuchi T 19
Migliavacca S 20
Minowa M 37
Mittal B 31
Miyano K 44
Miyazaki M 19
Mochizuki N 5
Mori H 14
Morino K 40
Mountain CF 34
Nagai M 37
Nagasue N 13
Nakabayashi H 44
Nakagami K 12
Nakamura K 10
Nakazawa M 5
Niimoto H 12
Noll KT 46
Nunnerley HB 24
Nyhus LM 2
Obata M 5
Okazaki S 40
Oota H 7
Order SE 27
Order SE 28
Ou Tim L 1
Ou-yan C 15
Ozeran L 23
Paillot B 26
Pedersen H 6
Pengo V 18
Pfeil H 47
Powell J 3
Pupa A 20
Rajkovic IA 21
Reber HA 49
Reddy JK 50
Rene E 15
Rigaud D 15
Roberts C 49
Roginski C 3
Rohner A 32
Roussel A 26
Rushton L 39
Saito S 10
Sakamoto K 5
Sanfelici G 33
Sasajima K 40
Sato J 44
Scarpa D 20
Schilling JJ 49
Scotti A 20
Scully M 23
Segal I 1
Segol P 26
Seo Y 19
Sequeira C 20
Serentha U 33
Shafritz DA 45
Shapiro B 16
Shimamoto F 12
Shirota A 40
Shouval D 45
Siegelman SS 28
Sigel B 2
Soeda O 14
Soreide O 8
Spigos DG 2
Stokes H 11
Stone R 23
Stoner GD 41
Suzuki A 51
Tahara E 12

Takagi K. 5
Takagi K. 7
Takahashi T. 51
Taketa K. 44
Taki M. 22
Takubo K. 40
Taniguchi H. 43
Taniguchi Y. 40
Terno G. 20
Thompson H. 11
Thompson NW. 16
Tobimatsu M. 10
Tomoda H. 19
Toyoda K. 10
TrumpBF. 42
Tsunekawa K. 14
Ueda N. 14
Van de Velde CJ. 25
Velasco JM. 2
Vinik AI. 16
Viste A. 8
Wallace J. 28
Wands JR. 45
Wasserman TH. 31
Watanabe M. 51
Wharam MD. 27
White TT. 49
Williams R. 21
Wilson SE. 23
Wood DK. 2
Wood WG. 36
Woodhouse CS. 11
Wyke RJ. 21
Yamane T. 44
Yamashita K. 40
Yanagawa H. 37
Yasunami Y. 10
Yokoyama H. 37
Yoshida A. 14
Yousif-Kadaru A. 21
Zurawski VR. 45

U.S. GOVERNMENT PRINTING OFFICE: 1982-381-847:206

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161

OFFICIAL BUSINESS

Penalty for Private Use, $300

PRINTED MATTER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-211

THIRD CLASS
BULK RATE

CT-19

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this publication.

☐ Check here if your address has changed and you wish to continue receiving this publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Computer Support Center
ICRDB Program
IIT Research Institute
10 West 35th Street
Chicago IL. 60616

CANCERGRAMS are distributed for the International Cancer Research Data Bank (ICRDB) by the National Technical Information Service (NTIS). **CANCERGRAMS** are available from NTIS on a standing order basis at $2 each for North American Continent addressees and $3 each for other addressees. An NTIS deposit account is required. For a list of subject categories or other information, please write to:

Subscription Section
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161